CDP-333ESD/605ESD

SERVICE MANUAL

CDP-333ESD:
AEP Model
CDP-605ESD:
US Model
Canadian Model

SPECIFICATIONS

COMPACT DISC PLAYER

System	Compact disc digital audio system
Disc	Compact disc
Laser	Semiconductor laser ($\lambda = 780$ nm)
Laser output	Max. 0.4 mW*
Spindle speed	200 rpm to 500 rpm (CLV)
Scan velocity	1.2–1.4 m/sec.
Error correction	Sony Super Strategy Cross Interleave Reed Solomon Code
Number of channel	Two
D/A conversion	16-bit linear
Frequency response	2 – 20,000 Hz ±0.3 dB
Signal to noise ratio	More than 106 dB
Dynamic range	More than 97 dB
Harmonic distortion	Less than 0.0025% (1 kHz)
Channel separation	More than 100 dB (1 kHz)
Wow and flutter	Below measurable limit
Output jacks	

*This output is the value measured at a distance of about 1.6 mm from the objective lens surface on the Optical Pick-up Block.

	Max. output level	Load impedance	Output impedance
LINE OUT	2 V (50 kΩ)	More than 10 kΩ	200 Ω
DIGITAL OUT	0.5 Vp-p (75 Ω)	75 Ω	75 Ω
HEADPHONES	28 mW Variable, max	32 Ω	—

Disc

Track pitch	1.6 μm
Sampling frequency	44.1 kHz
Quantization	16 bit linear quantizing/channel
Modulation system	EFM
Transfer rate	2.03 Mbit/sec. (before modulation)

— Continued on page 2 —

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE TRAME ET UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

MICROFILM

COMPACT DISC PLAYER

SONY®

AUD

General

Power requirements

US, Canadian model . . .	120 V AC, 60 Hz
AEP model	220 V AC, 50/60 Hz

Power consumption	20 W
Dimensions	Approx. 430 × 110 × 340 mm (w/h/d) ($17 \times 4^{3}/_{8} \times 13^{1}/_{2}$ inches)
Weight	Approx. 8.35 kg (18 lb 7 oz), net

REMOTE COMMANDER RM-D550

Remote control system	Infrared control
Power requirements	3 V DC with two size AA (R6) batteries
Dimensions	Approx. 67 × 20 × 175 mm (w/h/d) ($2^{3}/_{4} \times {}^{13}/_{16} \times 7$ inches)
Weight	Approx. 145 g (5 oz) incl. batteries

FEATURES

Direct selection

You can play a desired selection simply by pressing the corresponding numeric button (1–20).

Program play

You can play up to 20 selections in the desired order. Selections can be programmed even after play begins.

Variety of playing modes

Disc, program, single, shuffle and repeat playing modes.

Large and easy-to-read window display

Shows the elapsed playing time, the remaining time of the selection being played, the remaining time of the whole disc or remaining programmed selection numbers.

High quality sound

Ceramic resin deadening chassis is employed in the driving mechanism of the optical pick-up to avoid mechanical vibration. This assures exact signal reading from the track recorded on the compact disc.

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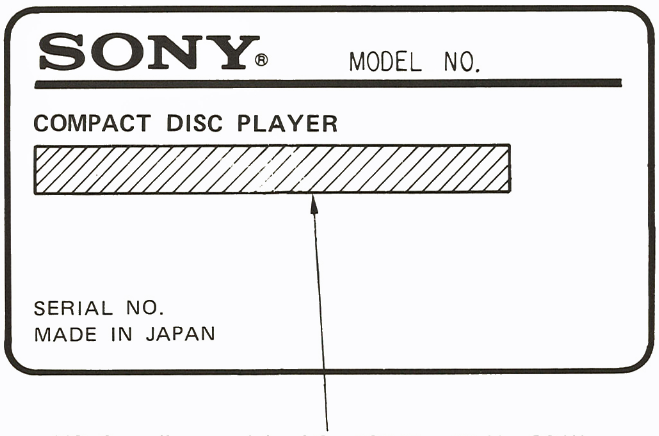
MODEL IDENTIFICATION

— Specification Labels —



US, Canadian model: AC: 120 V ~ 60 Hz 20 W
AEP model: AC: 220 V ~ 50/60 Hz 20 W

SAFETY CHECK-OUT (US Model)

After correcting the original service problem, perform the following safety check before releasing the set to the customer:
Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microampers). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2 V AC range are suitable. (See Fig. A)

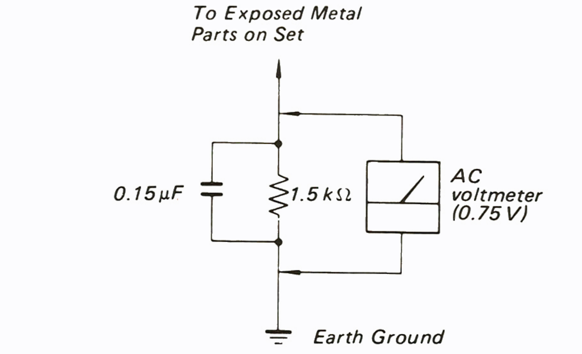


Fig. A. Using an AC voltmeter to check AC leakage.

PROTECTION OF EYES FROM LASER BEAM DURING SERVICING

This set employs a laser. Therefore, be sure to follow carefully the instructions below when servicing.

WARNING !!

WHEN SERVICING, DO NOT APPROACH THE LASER EXIT WITH THE EYE TOO CLOSELY. IN CASE IT IS NECESSARY TO CONFIRM LASER BEAM EMISSION, BE SURE TO OBSERVE FROM A DISTANCE OF MORE THAN 25 cm FROM THE SURFACE OF THE OBJECTIVE LENS ON THE OPTICAL PICK-UP BLOCK.

CAUTION:

The use of optical instrument with this product will increase eye hazard.

CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

1. Laser Diode Properties
   - Material: GaAlAs
   - Wavelength: 780 nm
   - Emission Duration: continuous
   - Laser Output: max. 0.4 mW*

     * This output is the value measured at a distance of about 1.6 mm from the objective lens surface on the Optical Pick-up Block.
   - Classification: Class IIIb.
2. During service, do not take the Optical Pick-up Block apart, and do not adjust the APC circuit. If there is a breakdown in the APC circuit (including laser diode), replace the entire Optiocal Pick-up Block (including APC borad).

BESKYTTELSE AF ØJNE MOD LASERSTRÅLING UNDER SERVICE

I dette apparat anvendes laserlys. Derfor skal nedenstående instruktioner nøje følges under service.

Følg iøvrigt instruktionerne i servicemanualen.

ADVARSEL!!

Under service må øjnene ikke komme nær objektiv-linsen på den optiske pick-up enhed. I tilfælde af at det er nødvendigt at kontrollere udsendelsen af laserlys, skal det ske i en afstand af mere end 25 cm fra den optiske pick-up.

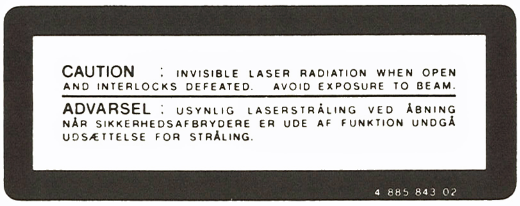
1. Laser-didoe data
   - Materiale: GaAlAs
   - Bølgelængde: 780 nm
   - Udstråling: Kontinuerlig
   - Laseroutput: Max. 0,4 mW*

     * Målt i 1,6 mm afstand fra overfladen af objektiv-linsen på den optiske pick-up enhed.
   - Klassifikation: Klasse IIIb.
2. Adskil aldrig den optiske pick-up enhed under service, og juster ikke APC kredsløbet (Automatic Power Control). Hvis APC kredsløbet (incl. laser-dioden) bryder ned, skal hele den optiske pick-up enhed (incl. APC printkortet) udskiftes.

LASER ADVARSEL MÆRKNING

Følgende mærkning findes indvendig i apparatet:

1. Advarsel Mærkning



CAUTION : INVISIBLE LASER RADIATION WHEN OPEN AND INTERLOCKS DEFEATED. AVOID EXPOSURE TO BEAM.

ADVARSEL : USYNLIG LASERSTRÅLING VED ÅBNING NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION UNDGÅ UDSÆTTELSE FOR STRÅLING.

4 885 843 02

VAROITUS: Laite sisältää, laserdiodin, joka lähettää (näkymätöntä) silmille vaarallista lasersateilyä.

– SERVICING NOTE –

LASER DIODE AND FOCUS SERCH OPERATION CHECK

1. Remove disc pully by lifting up chucking arm by hand. (Fig. A, B)
2. Make POWER switch on with no disc inserted and disc table closed.
3. Confirm that the operation indicated in Fig. C is performed while observing the objecting lens.

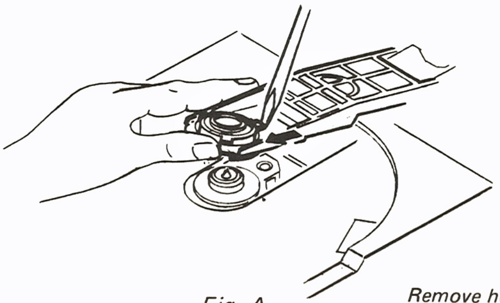
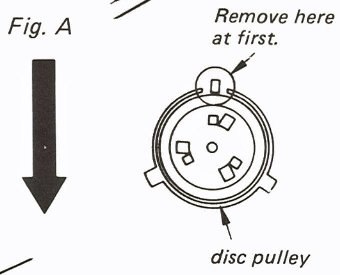


Fig. A


Remove here at first.
disc pulley

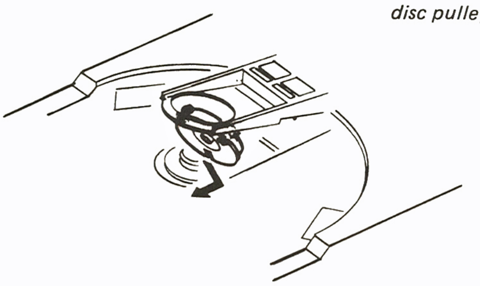
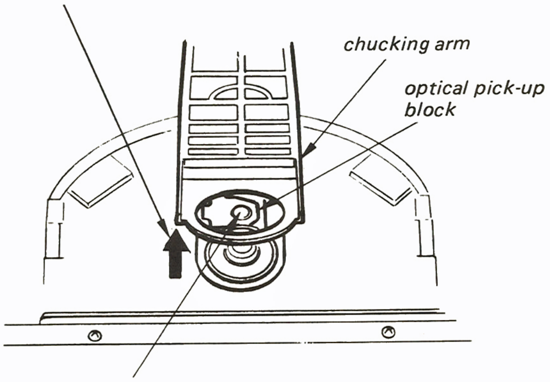


Fig. B


Lift up chucking arm by hand in the direction of arrow.
chucking arm
optical pick-up block

① *Confirm that laser beam is spread.*

② *Up and down motion of the objective lens. (3 times)*

Fig. C

NOTES ON LASER DIODE EMISSION CHECK

The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe more than 25 cm away from the objective lens.

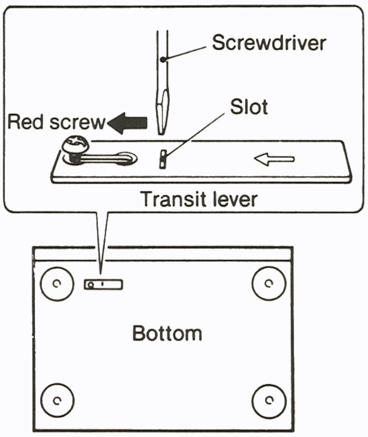
NOTE ON THE TRANSIT LEVER

A transit lever is provided at the bottom of the unit to protect the optical system against shock during transportation. **Before operating the CD player, be sure to move the lever in the direction of the arrow and secure it.**

1 Loosen the red screw with a screwdriver.

2 Insert the screwdriver into the slot in the lever and move it in the direction of the arrow until it stops.

3 Tighten the red screw.


Screwdriver
Slot
Red screw
Transit lever
Bottom

When transporting the unit again, move the lever in the opposite direction of the arrow and secure it with the screw.

– CAUTION FOR ELECTROSTATIC BREAKDOWN –

NOTES ON HANDLING THE BASE UNIT (BU-1E)

The laser diode in the optical pick-up block may suffer electrostatic breakdown because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.

The printed matter below is included in the repair parts. During repair, use the procedure in the printed matter.

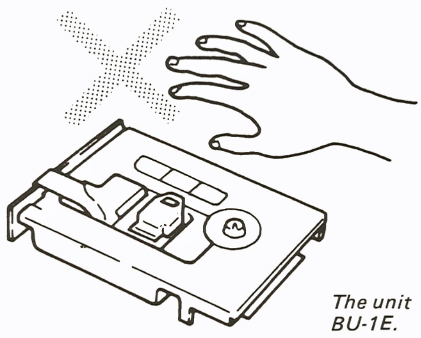
The following method is an example for reference purposes:

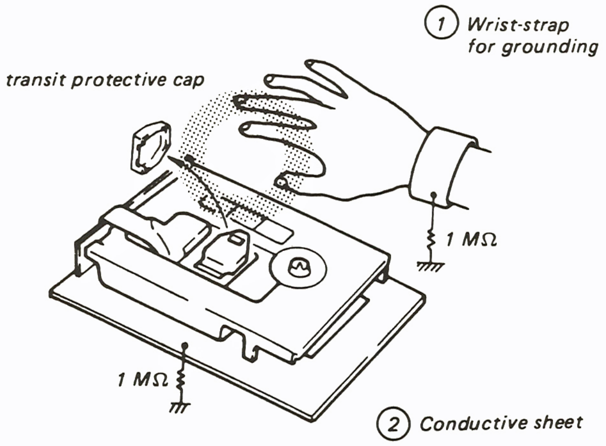
1. Place a conductive sheet on the workbench. (The black sheet used as repair parts wrapping).
2. Place the set on the conductive sheet so that the chassis touches the sheet. (This makes it the same potential as the conductive sheet).
3. Place your hands on the conductive sheet. (This makes them the same potential as the sheet).
4. Remove the optical pick-up block.
5. Perfrom work on top of the conductive sheet. Be careful that clothing does not touch the optical pick-up block.

Printed Matter Included in the Repair Parts

When opening or repairing a BU-1E, the procedure for grounding as follows is required to prevent damage caused by static electricity.

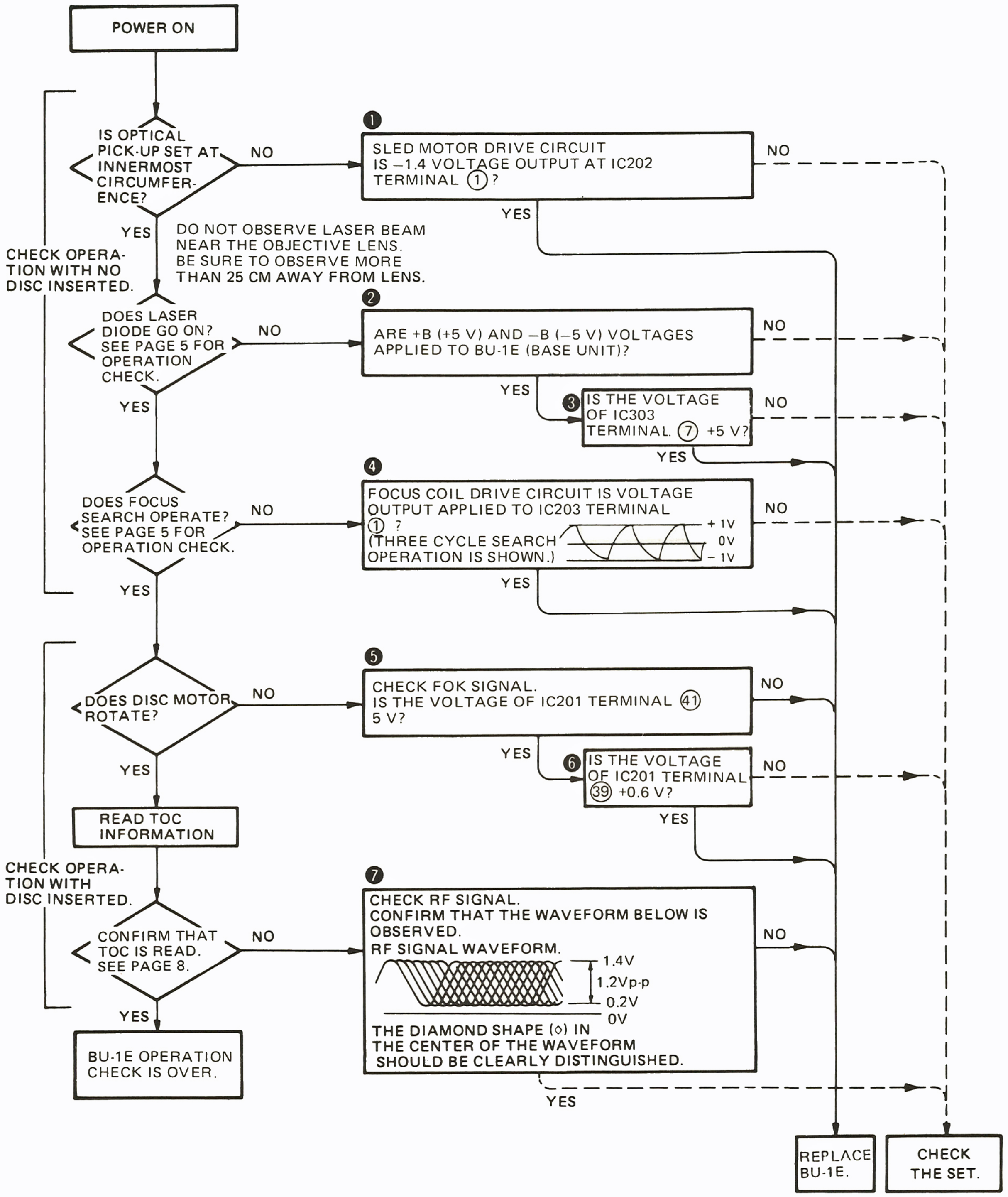
1. Grounding for the human body.
   Be sure to put on a wrist-strap for grounding (with impedance lower than $10^8\,\Omega$) whose other end is grounded The strap works to drain away the static electricity built-up on the human body.
2. Grounding for the work table.
   Be sure to lay on the table a cunductive sheet (with impedance lower than $10^9\,\Omega$) such as sheet of copper which is grounded.
3. As static electricity built-up on clothes is not drained away, be careful not to let your clothes touch the BU-1C.

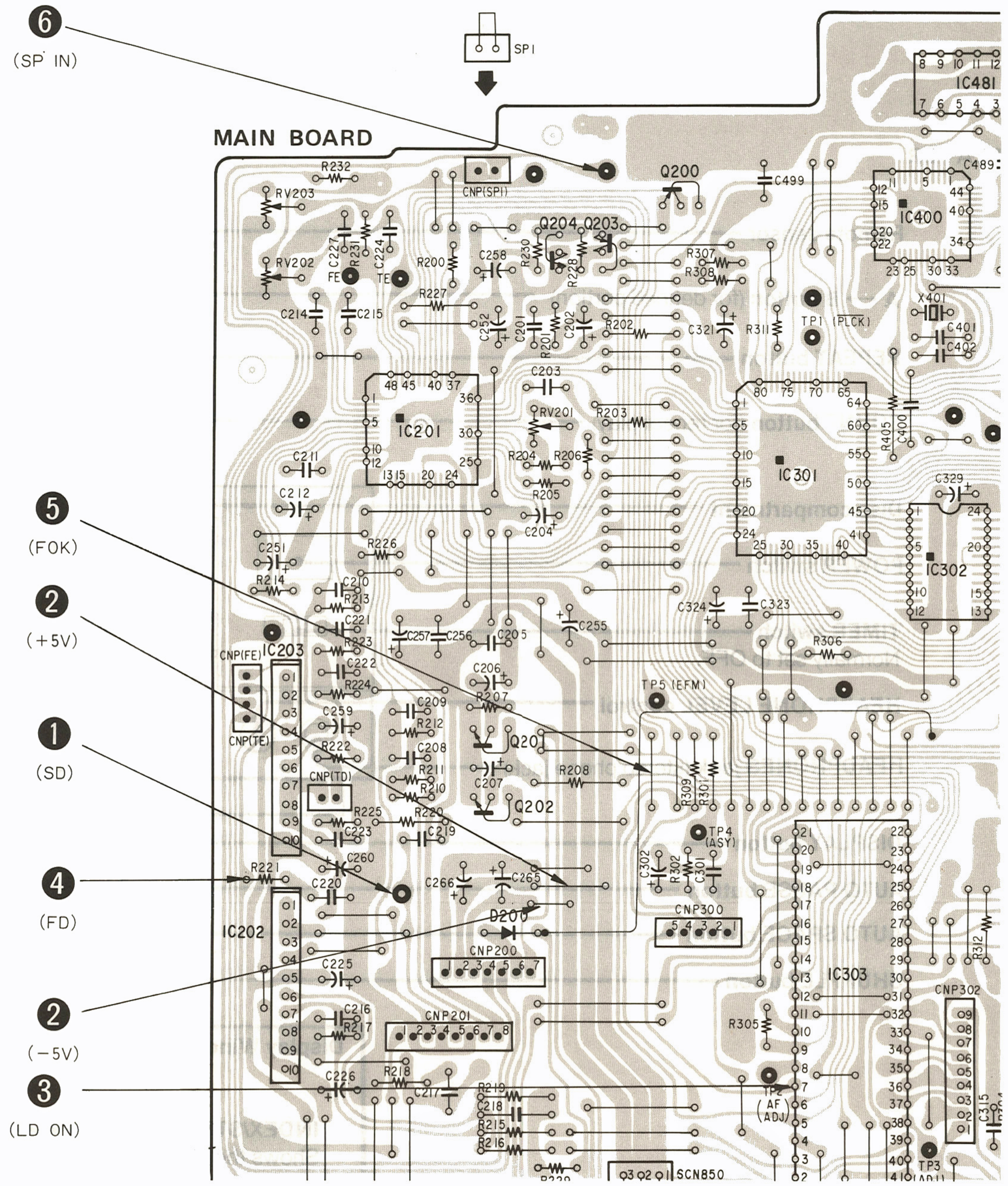




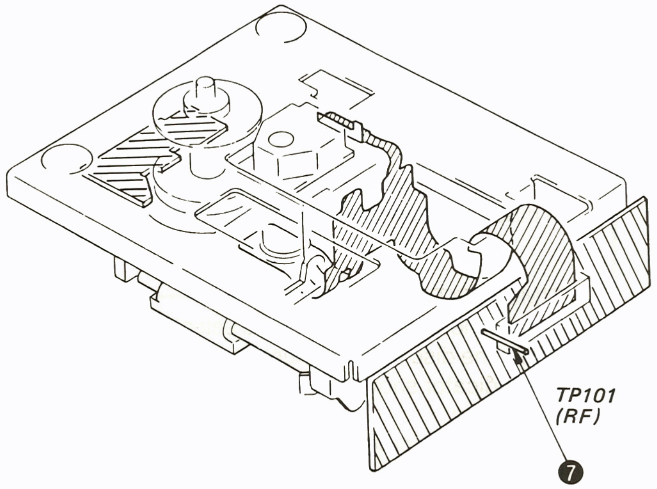
FLOW CHART OF BU-1E (BASE UNIT) TROUBLESHOOTING

- Confirm all connectors around BU-1E (base unit) are secured before the following check.


POWER ON
CHECK OPERATION WITH NO DISC INSERTED.
IS OPTICAL PICK-UP SET AT INNERMOST CIRCUMFERENCE?
NO
YES
①
SLED MOTOR DRIVE CIRCUIT IS −1.4 VOLTAGE OUTPUT AT IC202 TERMINAL ①?
DO NOT OBSERVE LASER BEAM NEAR THE OBJECTIVE LENS. BE SURE TO OBSERVE MORE THAN 25 CM AWAY FROM LENS.
DOES LASER DIODE GO ON? SEE PAGE 5 FOR OPERATION CHECK.
②
ARE +B (+5 V) AND −B (−5 V) VOLTAGES APPLIED TO BU-1E (BASE UNIT)?
③
IS THE VOLTAGE OF IC303 TERMINAL ⑦ +5 V?
DOES FOCUS SEARCH OPERATE? SEE PAGE 5 FOR OPERATION CHECK.
④
FOCUS COIL DRIVE CIRCUIT IS VOLTAGE OUTPUT APPLIED TO IC203 TERMINAL ①? (THREE CYCLE SEARCH OPERATION IS SHOWN.)
+1V
0V
−1V
CHECK OPERATION WITH DISC INSERTED.
DOES DISC MOTOR ROTATE?
⑤
CHECK FOK SIGNAL. IS THE VOLTAGE OF IC201 TERMINAL ㊶ 5 V?
⑥
IS THE VOLTAGE OF IC201 TERMINAL ㊴ +0.6 V?
READ TOC INFORMATION
CONFIRM THAT TOC IS READ. SEE PAGE 8.
⑦
CHECK RF SIGNAL. CONFIRM THAT THE WAVEFORM BELOW IS OBSERVED.
RF SIGNAL WAVEFORM.
1.4V
1.2Vp-p
0.2V
0V
THE DIAMOND SHAPE (◇) IN THE CENTER OF THE WAVEFORM SHOULD BE CLEARLY DISTINGUISHED.
BU-1E OPERATION CHECK IS OVER.
REPLACE BU-1E.
CHECK THE SET.


⑥ (SP IN)
⑤ (FOK)
② (+5V)
① (SD)
④ (FD)
② (−5V)
③ (LD ON)
MAIN BOARD
SP1
CNP(SP1)
Q200
IC481
IC400
IC201
IC301
IC302
IC203
IC202
IC303
D200
CNP200
CNP201
CNP300
CNP302
CNP(FE)
CNP(TE)
CNP(TD)
TP1 (PLCK)
TP4 (ASY)
TP5 (EFM)
TP2 (AF ADJ)
TP3
RV201
RV202
RV203
X401

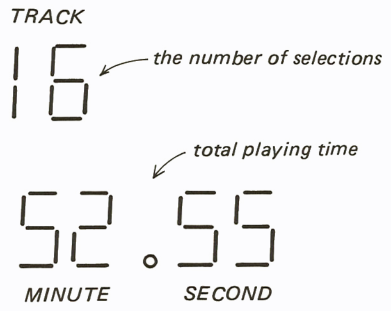
BU-1E (BASE UNIT)



CHECKING TOC INFORMATION READING

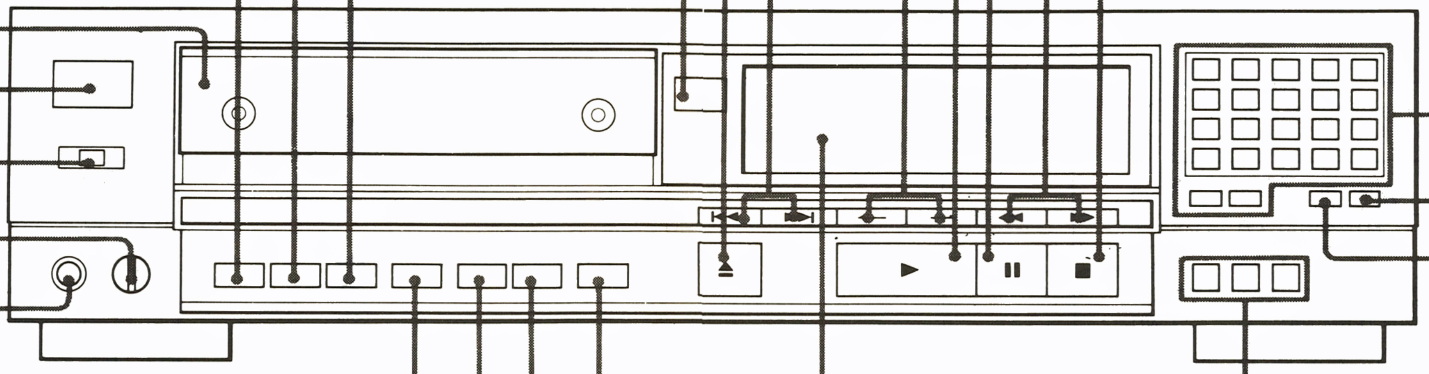
If TOC information is read correctly, the number of selections on the disc and the total playing time will be displayed.

The display will be as follows for YEDS-1.


TRACK
16
the number of selections
total playing time
52.55
MINUTE
SECOND

LOCATION OF CONTROLS

DISC PLAYER



Remote sensor

A ⟷ B button (for defined portion)

REPEAT button

COUNT button (for repeat play)

Disc compartment

POWER switch

TIMER switch
Normally set to OFF.

HEADPHONE LEVEL control

HEADPHONES jack (stereo phone jack)

DISPLAY button

AUTO PAUSE button

AUTO SPACE button

SHUFFLE button

⏏ (open/close) button

⏮/⏭ AMS (Automatic Music Sensor) button

◀— / —▶ (index) buttons

▶ (play) button

❚❚ (pause) button

◀◀/▶▶ (manual search) buttons

■ (stop) button

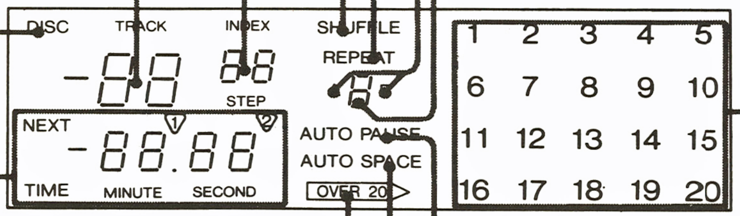
Numeric buttons

CLEAR button (for program play)

CHECK button (for program play)

PLAY MODE buttons
PROGRAM, SINGLE,CONTINUE

Display Window



INDEX/STEP indicator
Shows the index numbers of the selection being played. Also, shows the program numbers while programming or checking program.

TRACK indicator
Shows the track number of the selection being played. When the disc compartment is closed with a disc in place, this indicator shows for a few seconds the total number of selections on the disc.

Disc indicator
Illuminates when the disc compartment is closed with a disc in place or when the disc compartment is opened.

TIME/NEXT indicator
Shows the elapsed time of the selection being played. When the disc compartment is closed with a disc in place, this indicator shows for a few seconds the total playing time of the disc.
While playing programmed selections, this shows the two preceding programmed selections.

OVER 20 display
Illuminates when a disc having more than 20 selections is placed in the disc compartment.

AUTO SPACE indicator
Illuminates while the auto space function is operating.

SHUFFLE indicator
Illuminates while the shuffle function is operating.

REPEAT indicator
Illuminates while the repeat function is operating.

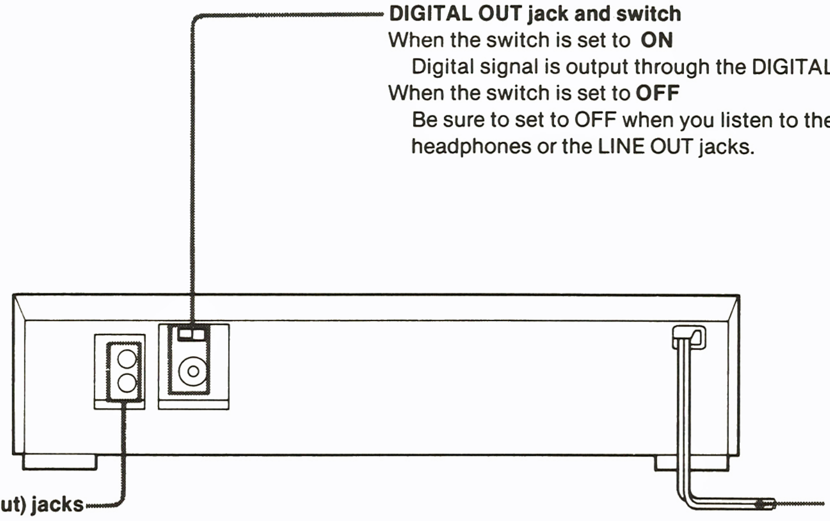
A ⟷ B indicators
Illuminate when the defined portion for repeat play is set.

COUNT indicator
Indicates the number of repeat plays.

Music calendar display
Displays disc selection numbers 1 – 20.

AUTO PAUSE indicator
Illuminates while the auto pause function is operating.

REAR PANEL

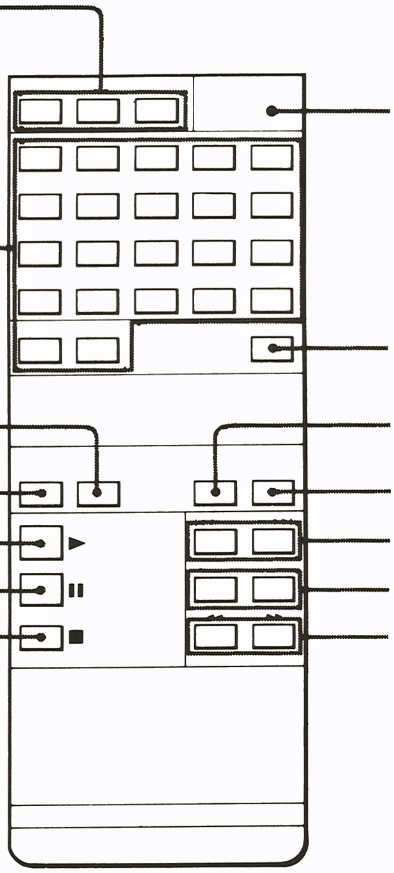


DIGITAL OUT jack and switch
When the switch is set to **ON**
Digital signal is output through the DIGITAL OUT jack.
When the switch is set to **OFF**
Be sure to set to OFF when you listen to the music through the headphones or the LINE OUT jacks.

LINE OUT (audio output) jacks
Output audio signal.

AC power cord

REMOTE COMMANDER



PLAY MODE buttons
PGM (program), SINGLE, CONTINUE

Output indicator

Numeric buttons

CLEAR button

A↔B button
(for defined portion)

TIME button

REPEAT button

SHUFFLE buttons

▶ (play) button

⏮/⏭ AMS buttons

❚❚ (pause) button

← / → INDEX buttons

■ (stop) button

◀◀/▶▶ buttons

SEARCH OPERATION

To play from a selection number which is greater than 20, use the [+10] and [0] to [9] buttons.

Examples
To play from the 22nd selection
1 Press [+10] two times.
2 Press [2].

To play from the 30th selection
1 Press [+10] three times.
2 Press [0].

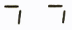
Keeping the ◀◀ or ▶▶ buttons pressed, you can locate a particular point of a selection during play or pause.

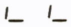
To go back at a high speed	Keep ◀◀ pressed.
To go ahead at a high speed	Keep ▶▶ pressed.

Release the button at the desired point found by monitoring the high-speed sound.

In pause mode
- The search speed is increased by three times.
- As no sound comes out, observe the time counter to search for the desired point.

Keeping ◀◀ or ▶▶ pressed, following indication appears.


: At the disc end


: At the very beginning of the disc

PROGRAM PLAY

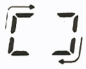
What is this indication? " – – – – "
If a selection numbered 21 or higher is programmed or total playing time of the programmed selection exceeds 99 min. 59 sec., " – – – – " indications appear on the display window instead of the numbers.

If the PROGRAM button is pressed during playing
The selection being played is programmed if the PROGRAM button is pressed during disc play, shuffle play or single play.

TO CHECK THE PROGRAMMED SELECTIONS

Press CHECK.
Each time the button is pressed, the selection number and its playing order are displayed as programmed.
- The programmed selection can be checked during playing.
- When selections after the 20th are being checked, the track number and program order number are displayed, but there is no display in the music calendar.
- End is displayed when the last programmed selection plays.

SHUFFLE PLAY



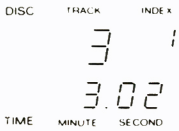
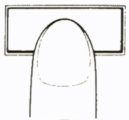
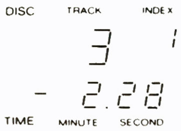
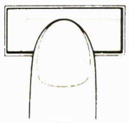
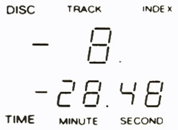
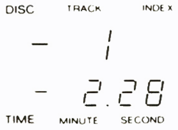
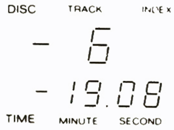
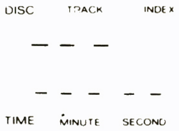
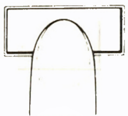
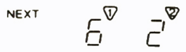
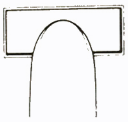
What is this indication?
This indication appears while the player is "shuffling" the selection.

REPEAT PLAY

If you want to repeat play more than two times
Press COUNT the number of times you want the play to repeat.
- Up to nine repeat plays are possible.
- The COUNT button can be pressed in any playing mode.
- To cancel the number of times for repeat play, press REPEAT again.
- In the case of the play between the defined portion (A ⟷ B), the COUNT button is inoperative.

Note
Repeat function is effective even when the playing mode is changed, provided that the repeat play between the defind portion (A ⟷ B) is released.

INFORMATION DISPLAY

	CONTINUE	SINGLE	PROGRAM	SHUFFLE
1 Normal display	 DISC TRACK INDEX 3 1 3.02 TIME MINUTE SECOND Track number and elapsed playing time of each selection			
2 DISPLAY TIME/NEXT(PGM) 	 DISC TRACK INDEX 3 1 - 2.28 TIME MINUTE SECOND Track number and remaining time of each selection			
3 DISPLAY TIME/NEXT(PGM) 	Remaining number of selections and total remaining time of disc  DISC TRACK INDEX - 8. -28.48 TIME MINUTE SECOND	Remaining number (–1) and remaining time of the selection *  DISC TRACK INDEX - 1 - 2.28 TIME MINUTE SECOND	Remaining number of the programmed selections and total remaining time *  DISC TRACK INDEX - 6 - 19.08 TIME MINUTE SECOND	"– – – –" indication appears.  DISC TRACK INDEX - - - - - - - - TIME MINUTE SECOND
4 DISPLAY TIME/NEXT(PGM) 	Same display as shown in step **1**.	Same display as shown in step **1**.	Numbers of the next selection and the selection after next. 	Same display as shown in step **1**.
5 DISPLAY TIME/NEXT(PGM) 			Same display as shown in step **1**.	

SECTION 1
OUTLINE

1-1. CIRCUIT DESCRIPTION

S SERVO (Defect Prediction Servo)

There was a detection circuit on former models (refer to CDP-103, CDP-303ES Service Manual circuit description) for detecting signal dropout caused by such defects as dirt on the disc or bubbles and scratches caused during production of the disc. However, that method had the disadvantage of a time lag between generation of the dropout and switching of servo loop gain, and sometimes detection could not be done.

With the S servo (defect prediction servo) used on this set, when a defect on the disc occurs in the same cycle as the rotation cycle, the system recognizes the cycle and detects the error. It predicts the timing at which the error will next be generated and controls the servo amount of the focus and tracking servo circuits. This means that servo gain switching is enabled immediately before the dropout occurs, and stable tracing relative to disc defects is possible.

It also has the same time precision at both the inner and outer circumferences because it responds to CLV by time data from the mechanism control IC.

Fig. 1 shows an outline of the S servo system.

Refer to Figures 2 and 3 for the following explanation of operation. When there is a defect on the disc, the RF signal is cut (Ⓐ), envelope detection is done inside IC101 (the same as the conventional method) and output is from pin ㉑ .

That output signal (DFCT) is input to defect control IC IC304 pin ㉚ (Ⓑ). The time data from mechanism control IC IC303 and DFCT input are compared inside IC304, the time of the next error is predicted, and just before dropout occurs, a signal is output from pin ㉙ (Ⓒ). The timing of this output is set by IC304. The result of taking the OR of this output and IC101 pin ㉑ output is input to IC201 pin ㊹ (Ⓓ) and the sequencer inside IC201 switches servo gain.

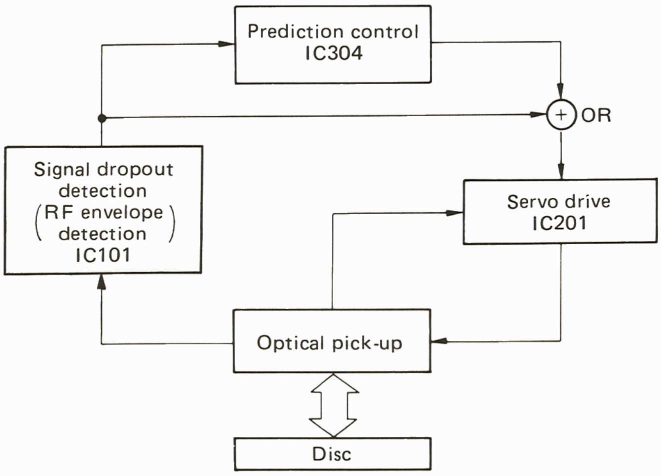

Prediction control
IC304
+
OR
Signal dropout detection
(RF envelope detection)
IC101
Servo drive
IC201
Optical pick-up
Disc

Fig. 1 S Servo Block Diagram

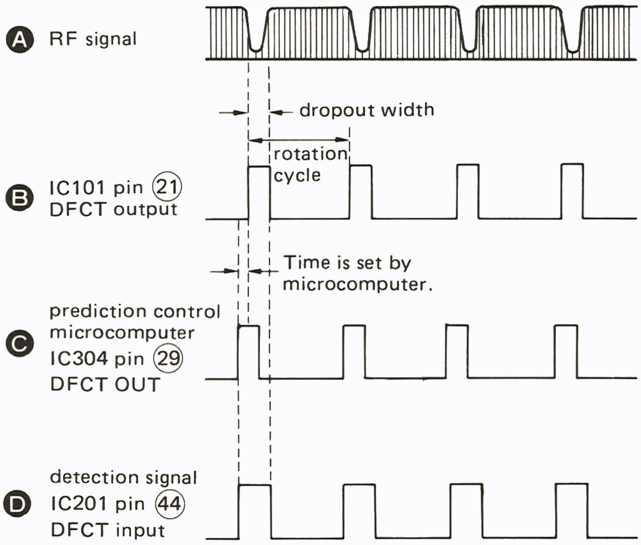

Ⓐ RF signal
dropout width
rotation cycle
Ⓑ IC101 pin ㉑
DFCT output
Time is set by microcomputer.
Ⓒ prediction control microcomputer
IC304 pin ㉙
DFCT OUT
Ⓓ detection signal
IC201 pin ㊹
DFCT input

Fig. 2 Defect Detection Waveforms

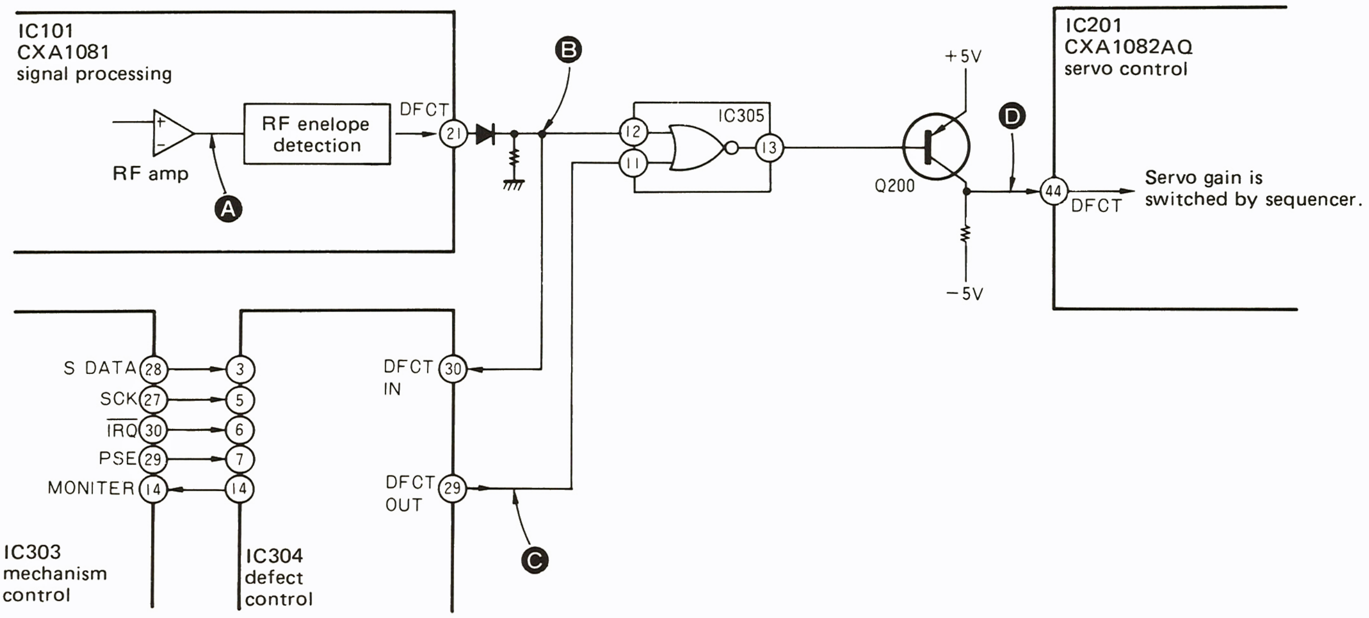

IC101
CXA1081
signal processing
RF amp
RF enelope detection
DFCT
21
A
B
IC305
12
11
13
+5V
Q200
-5V
D
IC201
CXA1082AQ
servo control
44
DFCT
Servo gain is switched by sequencer.
S DATA 28
SCK 27
IRQ 30
PSE 29
MONITER 14
3
5
6
7
14
DFCT IN 30
DFCT OUT 29
C
IC303
mechanism
control
IC304
defect
control

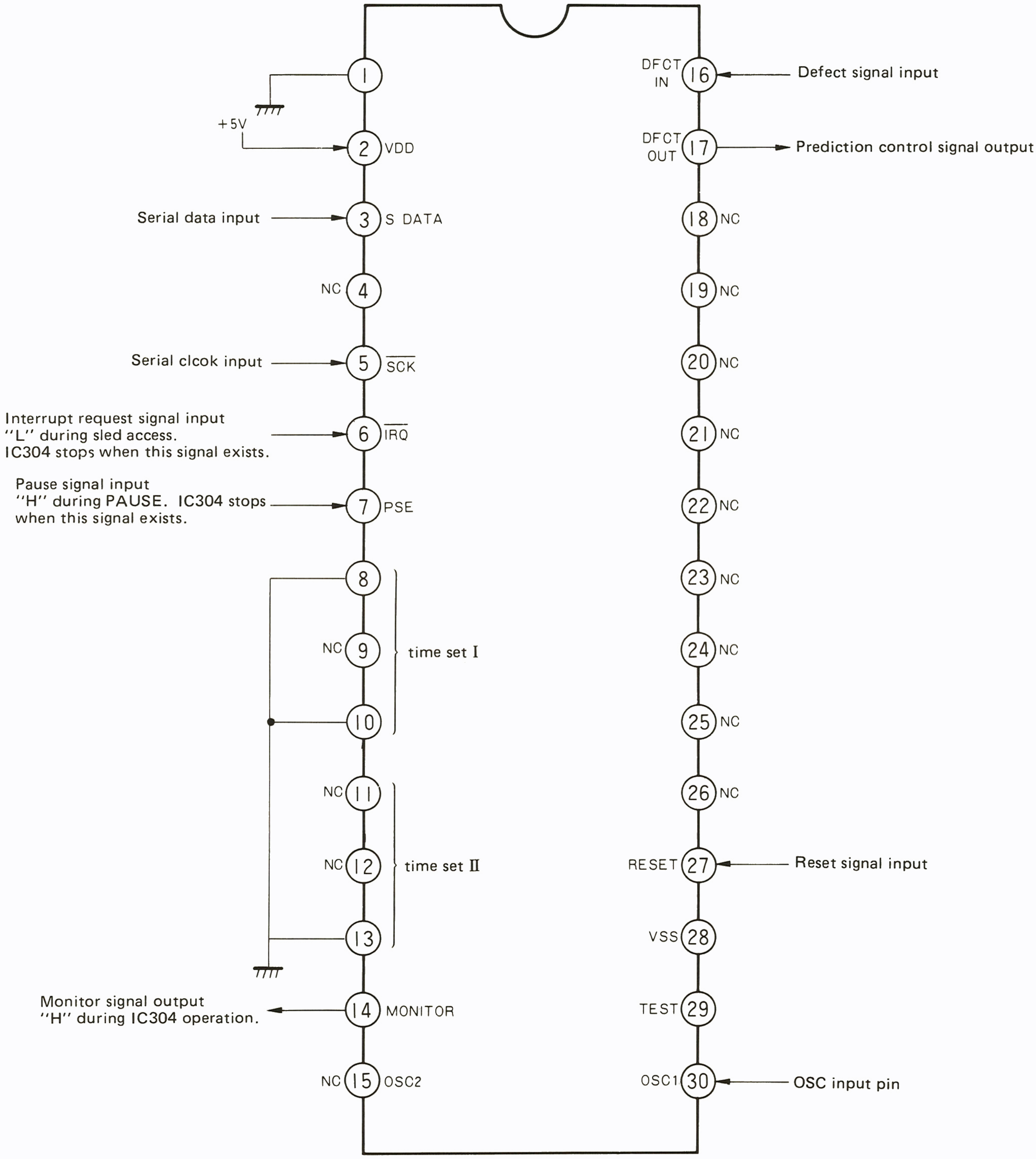
Fig. 3 Defect Detection Circuit

IC303 (MSM6404-181RS) PIN FUNCTIONS

Pin No.	I/O	Pin Name	Function
1	OUT	REC MUTE	Synchro REC MUTE signal output pin. Not used on this set.
2	OUT	PAUSE	Synchro PAUSE release signal output pin. Not used on this set.
3	IN	$\overline{\text{REC M}}$	Synchro REC signal input pin. Not used on this set.
4	OUT	$\overline{\text{D/F MUTE}}$	Digital signal muting control output pin. "L" during muting. This is the inverted output of ⑤ DIGITAL MUTE.
5	OUT	DIGITAL MUTE	Digital signal muting control output pin. "H" during muting.
6	OUT	AUDIO MUTE	Audio signal muting control output pin. "H" during muting.
7	OUT	$\overline{\text{LD ON}}$	Output pin which controls laser diode ON/OFF.
8	IN	AF ADJ	Not used. Normally "H".
9 10	–	OSC $\overline{\text{OSC}}$	Clock pins.
11	IN	$\overline{\text{RESET}}$	Reset input pin. Goes "H" about 0.15 seconds after power ON.
12	IN	TEST	LSI test pin. Connected to GND.
13	IN	SCOR	SUB Q sync signal input pin.
14	IN	MONITOR	Input pin for monitor signal from IC304. "H" during IC304 operation.
15	IN	$\overline{\text{IN SW}}$	Input pin which detects that disc table is closed. "L" during CLOSE.
16	IN	$\overline{\text{OUT SW}}$	Input pin which detects that disc table is open. "L" during OPEN.
17	IN	F OK	Focus OK signal input pin.
18	IN	SQCK	WFCK (Write Frame Clock) input pin.
19	IN	GFS	Guard Frame Sync input pin. "H" is input when data can be read normally.
20	IN	SUB Q	SUB Q signal (has data such as address, emphasis, etc.) input pin.
21	–	GND	Ground pin.
22	IN	SENSE	Input pin for IC201, IC301 SENS output.
23	OUT	CLOCK	Clock output pin for serial data transmission to IC201, IC301.
24	OUT	$\overline{\text{LATCH}}$	Latch output pin for serial data transmission to IC201, IC301.
25	OUT	DIRC	Output pin to IC201 during 1 track jump. Normally "H". Inverts direction of track jump when "L". Set to normal tracking mode by "H". Output "L" for a certain time when TZC rise or fall is detected.
26	OUT	DATA	Output pin for serial data to IC201, IC301.
27	OUT	$\overline{\text{S CK}}$	Clock output pin for serial data transmission to IC304.
28	OUT	S DATA	Serial data output pin to IC304.
29	OUT	PSE	Pause signal output pin to IC304. "H" during PAUSE.
30	OUT	$\overline{\text{IRQ}}$	Interrupt request signal output pin to IC304. "L" during sled access.
31	–	R/$\overline{\text{W}}$	DATA input and output states (read and write) control (sync) signal.
32	OUT	S ACK	Output pin for acknowledge signal of IC700 M REQ signal.
33	IN	M REQ	IC700 M REQ signal input pin.
34–37	IN/OUT	CMD 0 – CMD 3	Data input/output pins with IC700.
38	IN	ADJUST	When this pin is made "L", IC303 does not load out the disc even if servo or other abnormalities are detected. This pin is used during servo, PLL and other adjustment. Direct search is also not done, and access can only be done by track jumping.

Pin No.	I/O	Pin Name	Function
39	OUT	LOAD IN	Output pin which drives the loading motor to the close side.
40	OUT	LOAD OUT	Output pin which drives the loading motor to the open side.
41	OUT	EPS	Output pin which detects disc emphasis and switches emphasis ON/OFF.
42	–	Vcc	Power supply pin (5V).

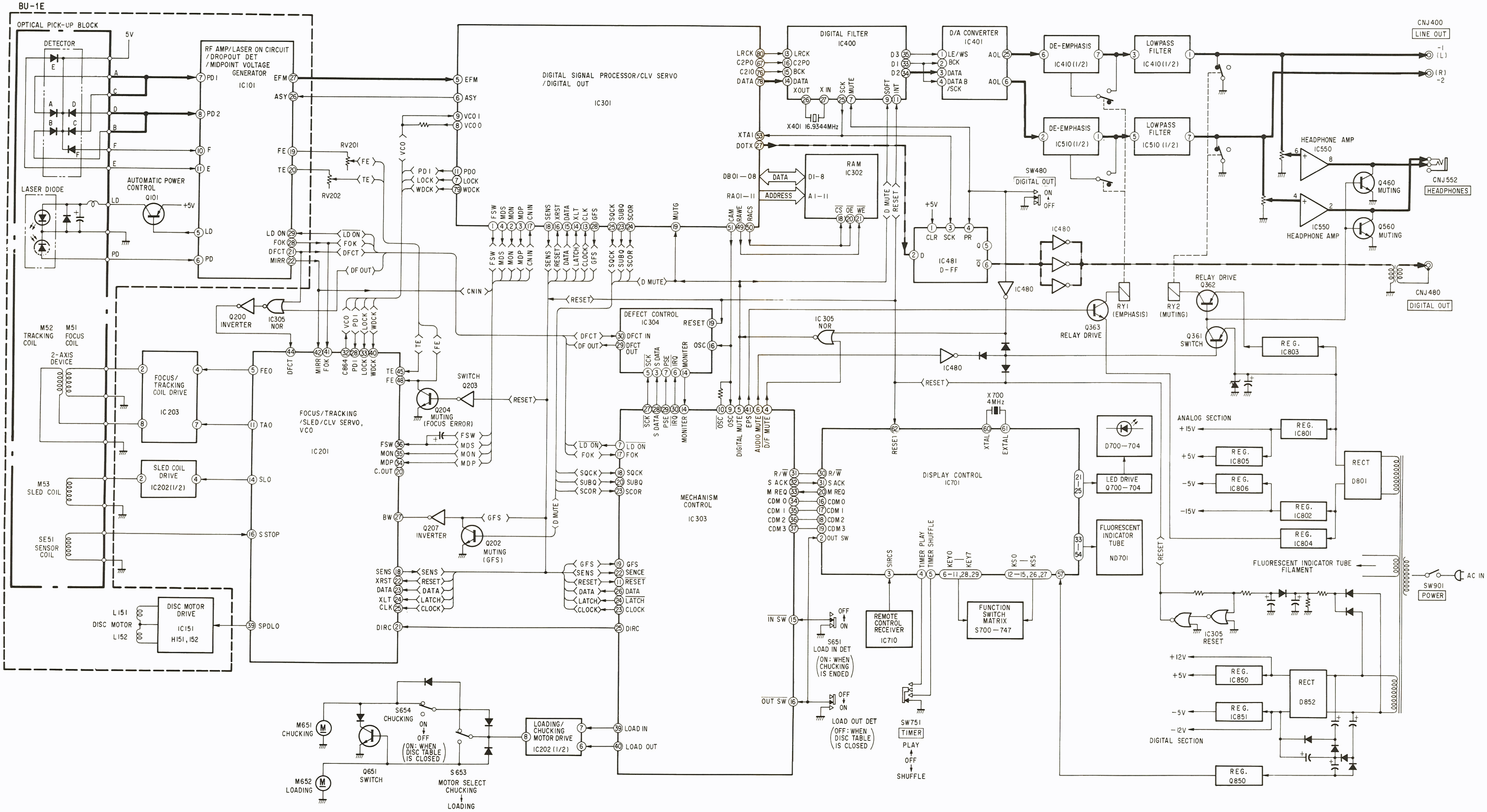
IC304 (LC6523-3270H) PIN FUNCTIONS


1
+5V
2 VDD
Serial data input
3 S DATA
NC 4
Serial clcok input
5 SCK
Interrupt request signal input
"L" during sled access.
IC304 stops when this signal exists.
6 IRQ
Pause signal input
"H" during PAUSE. IC304 stops
when this signal exists.
7 PSE
8
NC 9
10
time set I
NC 11
NC 12
13
time set II
Monitor signal output
"H" during IC304 operation.
14 MONITOR
NC 15 OSC2
DFCT IN 16
Defect signal input
DFCT OUT 17
Prediction control signal output
18 NC
19 NC
20 NC
21 NC
22 NC
23 NC
24 NC
25 NC
26 NC
RESET 27
Reset signal input
VSS 28
TEST 29
OSC1 30
OSC input pin

IC400 (CXD1088Q) PIN FUNCTIONS

Pin No.	I/O	Pin Name	Function
7	IN	MUTE	Muting signal input pin. Output is muted when "H".
8	IN	TEST1	LSI test pin. Normally fixed at "L" level.
9	IN	SOFT	Soft muting signal input pin. Soft muting when "H". Soft muting: Gradual muting, as for fade-out.
10	IN	HOLD	Mute operation ON/OFF switching pin. Mute operation stops when "H".
11	IN	INIT	Reset signal input pin.
12	IN	DPOL	Inverts input data polarity. Inverts when "H".
13	IN	LRCK	LRCK input pin.
14	IN	DATA	Audio data input pin. 16 bit x 2
15	IN	BCK	BCK input pin.
16	IN	C2PO	Error flag input pin.
17·39	–	VDD	Positive power supply (5V). ⑰ and ㊴ are connected inside.
18	IN	TEST2	LSI test pin. Normally fixed at "L" level.
19	IN	ROM1	Switching pin for 83rd-order ROM/21st-order ROM inside IC. "H": 83rd-order ROM
20	IN	ROM2	Switching pin for 83rd-order ROM/21st-order ROM inside IC. "H": 21st-order ROM
21	IN	OFST	Switching pin for offset apply/not apply to output. "H": offset applied to output
22	IN	OPDL	Offset value polarity indication pin. "H": +1% "L": −1%
6·28	–	Vss	Negative power supply (GND).
23	IN	DRES	Data word length selection pin during Sony format output. "H": 18 bit "L": 16 bit
24	IN	FORM	Output format selection pin. "H": I^2S format "L": Sony format
25	OUT	SCK	System clock output pin for external IC.
26	OUT	X OUT	Crystal oscillation circuit output pin. f = 16.9344 MHz
27	IN	X IN	Crystal oscillation circuit input pin. f = 16.9344 MHz
29	OUT	APTR	Aperture clock output pin for R channel.
30	OUT	APTL	Aperture clock output pin for L channel.
31	IN	SP	Serial output/parallel output switching pin.
32		LRO	LRCK output pin.
33	OUT	D1	During parallel output: D1 (audio data MSB) output During serial output: BCK output
34	OUT	D2	During parallel output: D2 output During serial output: Audio data output
35	OUT	D3	During parallel output: D3 output During serial output: { LRCK output (I^2S format) WFCK output (Sony format)
36–38 40–44 1–5	OUT	D4 – D16	During parallel output: D4 – D16 output During serial output: fixed at "L" level

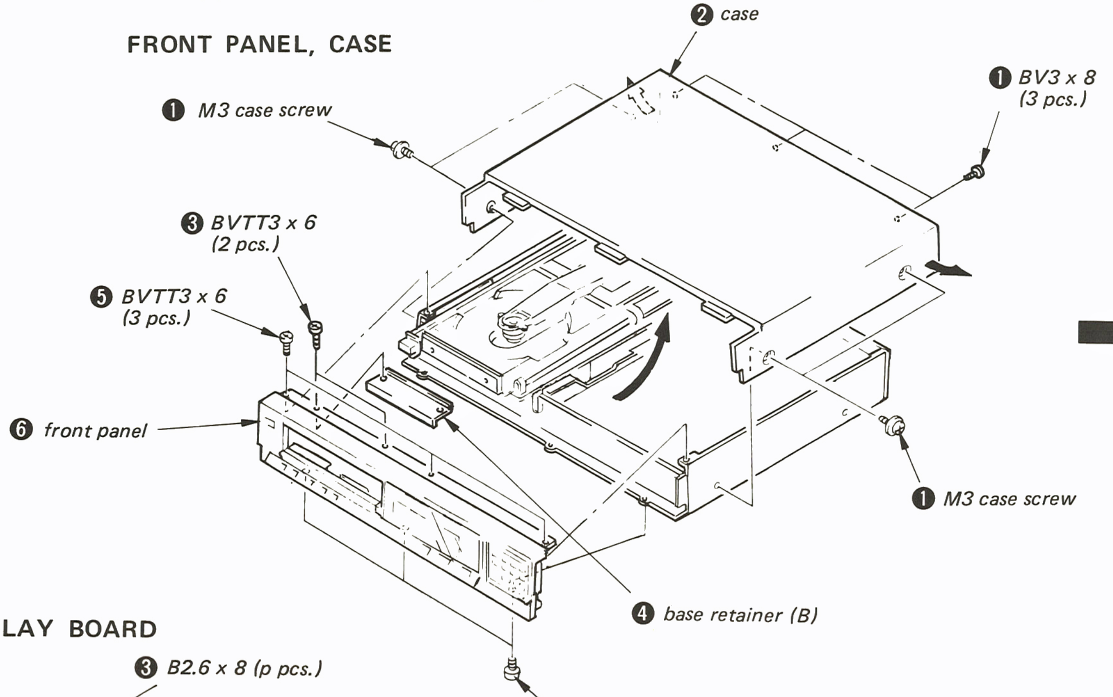
1-2. BLOCK DIAGRAM


BU-1E
OPTICAL PICK-UP BLOCK
DETECTOR
5V
LASER DIODE
AUTOMATIC POWER CONTROL
Q101
+5V
RF AMP/LASER ON CIRCUIT /DROPOUT DET /MIDPOINT VOLTAGE GENERATOR
IC101
PD1
PD2
EFM
ASY
FE
TE
LD ON
FOK
DFCT
MIRR
LD
PD
RV201
RV202
Q200 INVERTER
IC305 NOR
M52 TRACKING COIL
M51 FOCUS COIL
2-AXIS DEVICE
FOCUS/TRACKING COIL DRIVE
IC203
SLED COIL DRIVE
IC202(1/2)
M53 SLED COIL
SE51 SENSOR COIL
DISC MOTOR DRIVE
IC151
H151, 152
L151
DISC MOTOR
L152
FEO
TAO
SLO
S STOP
SPDLO
FOCUS/TRACKING /SLED/CLV SERVO, VCO
IC201
DFCT
MIRR
FOK
C864
VCO
PDI
LOCK
WDCK
SWITCH Q203
Q204 MUTING (FOCUS ERROR)
FSW
MON
MDP
C.OUT
MDS
BW
GFS
Q207 INVERTER
Q202 MUTING (GFS)
SENS
XRST
DATA
XLT
CLK
RESET
LATCH
CLOCK
DIRC
DIGITAL SIGNAL PROCESSOR/CLV SERVO /DIGITAL OUT
IC301
EFM
ASY
VCO1
VCO0
PDO
LOCK
WDCK
FSW MDS MON MDP CNIN
SENS XRST DATA XLT CLK GFS
SQCK SUBQ SCOR
MUTG
CAM RAWE RACS
XTAI
DOTX
DB01—08
RA01—11
DATA
ADDRESS
RAM
IC302
DI-8
A1—11
CS OE WE
D MUTE
RESET
CNIN
DF OUT
DEFECT CONTROL
IC304
DFCT IN
DFCT OUT
SCK S DATA PSE IRQ MONITER
OSC
LD ON
FOK
SQCK
SUBQ
SCOR
GFS
SENCE
MECHANISM CONTROL
IC303
LOAD IN
LOAD OUT
OSC OSC DIGITAL MUTE EPS AUDIO MUTE D/F MUTE
DIGITAL FILTER
IC400
LRCK
C2PO
C210
DATA
BCK
XOUT
X IN
SCK
MUTE
X401 16.9344MHz
D3
D1
D2
SOFT
INT
D/A CONVERTER
IC401
LE/WS
BCK
DATA
DATA B /SCK
AOL
SW480
DIGITAL OUT
ON
OFF
+5V
CLR SCK PR
IC481
D-FF
IC480
DE-EMPHASIS
IC410(1/2)
IC510(1/2)
LOWPASS FILTER
IC410(1/2)
IC510(1/2)
CNJ400
LINE OUT
-1 (L)
(R) -2
HEADPHONE AMP
IC550
Q460 MUTING
Q560 MUTING
CNJ552
HEADPHONES
CNJ480
DIGITAL OUT
RELAY DRIVE
Q362
RY1 (EMPHASIS)
RY2 (MUTING)
Q363 RELAY DRIVE
Q361 SWITCH
REG. IC803
IC305 NOR
IC480
X700 4MHz
DISPLAY CONTROL
IC701
R/W
S ACK
M REQ
CDM 0
CDM 1
CDM 2
CDM 3
OUT SW
XTAL
EXTAL
RESET
D700—704
LED DRIVE Q700—704
FLUORESCENT INDICATOR TUBE
ND701
SIRCS
TIMER PLAY
TIMER SHUFFLE
KEY0 — KEY7
KS0 — KS5
REMOTE CONTROL RECEIVER
IC710
FUNCTION SWITCH MATRIX
S700—747
IN SW
OUT SW
S651 LOAD IN DET (ON: WHEN CHUCKING IS ENDED)
LOAD OUT DET (OFF: WHEN DISC TABLE IS CLOSED)
SW751 TIMER
PLAY
OFF
SHUFFLE
ANALOG SECTION
+15V
+5V
-5V
-15V
REG. IC801
REG. IC805
REG. IC806
REG. IC802
REG. IC804
RECT
D801
FLUORESCENT INDICATOR TUBE FILAMENT
SW901 POWER
AC IN
IC305 RESET
+12V
+5V
-5V
-12V
REG. IC850
REG. IC851
RECT
D852
DIGITAL SECTION
REG. Q850
M651 CHUCKING
M652 LOADING
Q651 SWITCH
S654 CHUCKING
ON
OFF
(ON: WHEN DISC TABLE IS CLOSED)
S653 MOTOR SELECT CHUCKING LOADING
LOADING/CHUCKING MOTOR DRIVE
IC202(1/2)

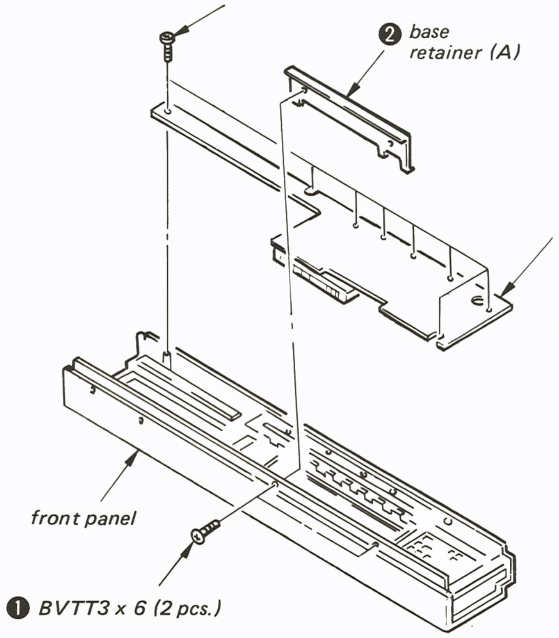
SECTION 2
DISASSEMBLY

Note: Follow the disassembly procedure in the numerical order given.

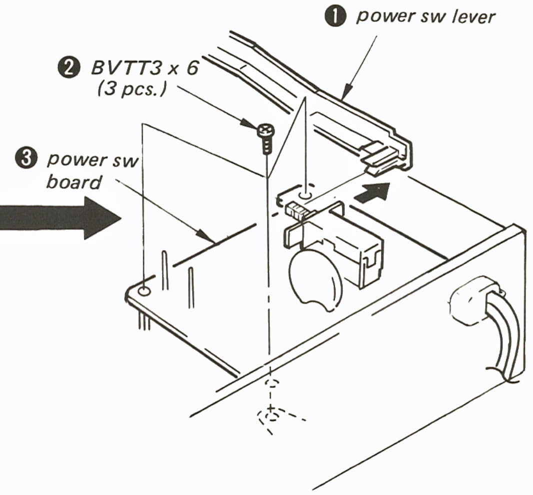
FRONT PANEL, CASE


❷ case
❶ BV3 x 8 (3 pcs.)
❶ M3 case screw
❸ BVTT3 x 6 (2 pcs.)
❺ BVTT3 x 6 (3 pcs.)
❻ front panel
❶ M3 case screw
❹ base retainer (B)
❺ B2.6 x 8 (3 pcs.)

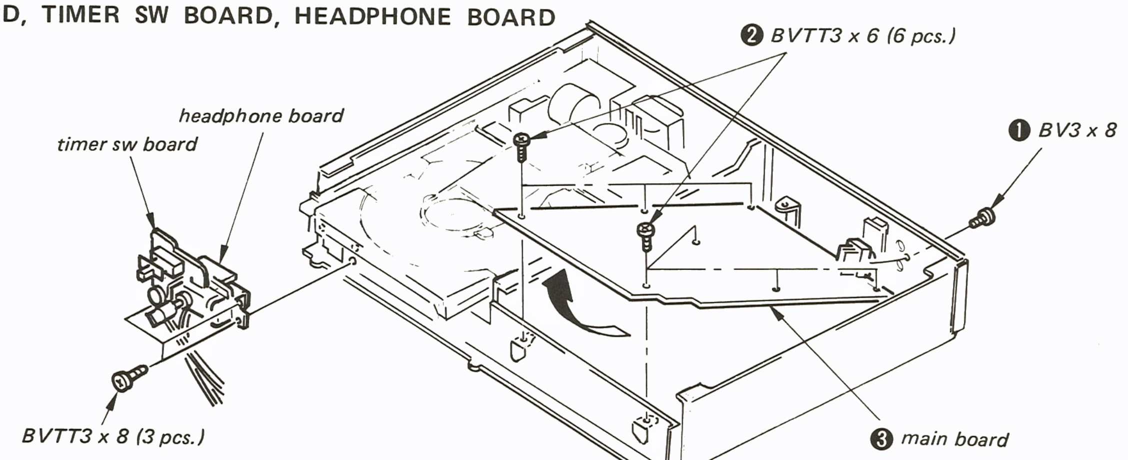
DISPLAY BOARD


❸ B2.6 x 8 (p pcs.)
❷ base retainer (A)
❹ display board
front panel
❶ BVTT3 x 6 (2 pcs.)

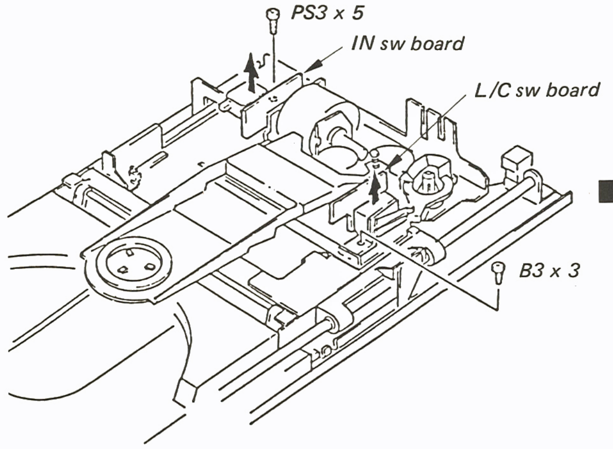
POWER SW BOARD


❶ power sw lever
❷ BVTT3 x 6 (3 pcs.)
❸ power sw board

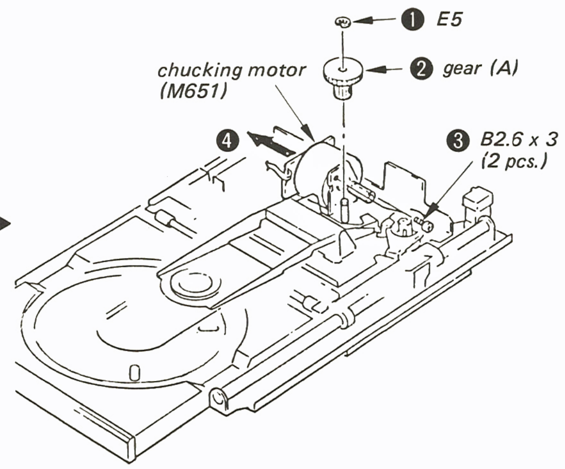
MAIN BOARD, TIMER SW BOARD, HEADPHONE BOARD


❷ BVTT3 x 6 (6 pcs.)
headphone board
timer sw board
❶ BV3 x 8
BVTT3 x 8 (3 pcs.)
❸ main board

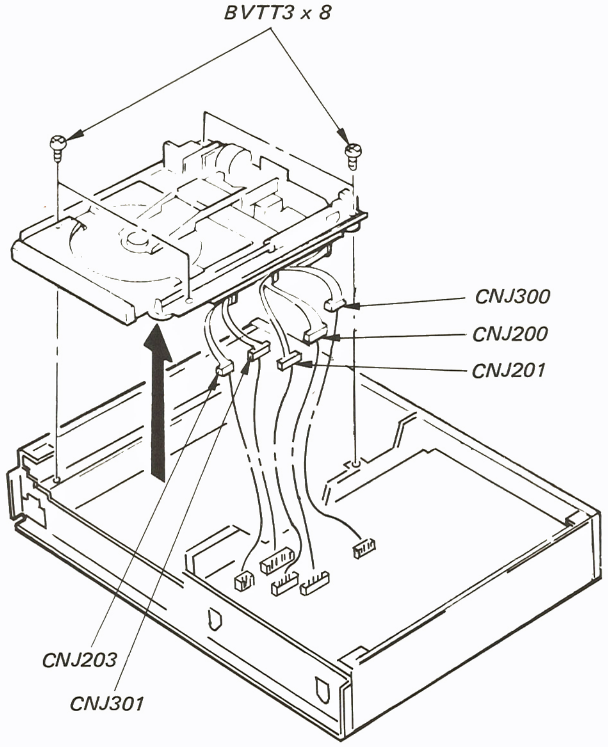
IN SW BOARD, L/C SW BOARD


PS3 x 5
IN sw board
L/C sw board
B3 x 3

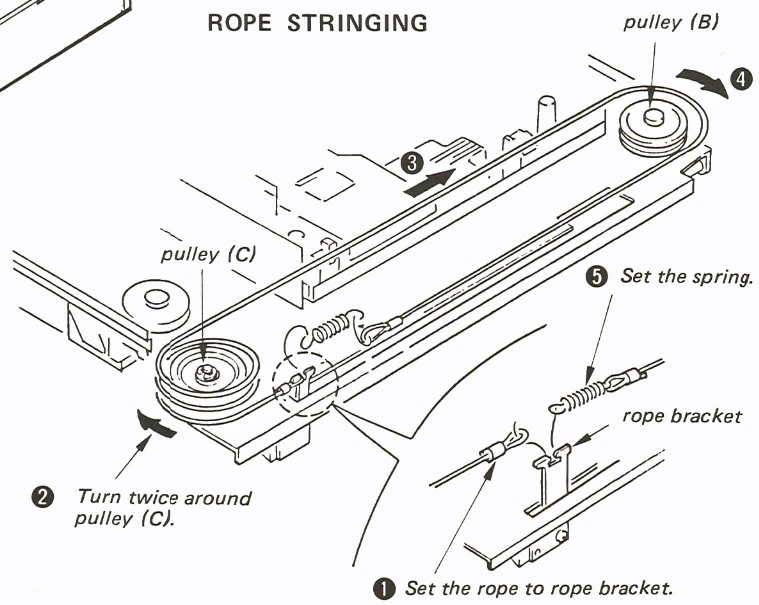
CHUCKING MOTOR (M651)


❶ E5
chucking motor (M651)
❷ gear (A)
❹
❸ B2.6 x 3 (2 pcs.)

MECHANISM SECTION


BVTT3 x 8
CNJ300
CNJ200
CNJ201
CNJ203
CNJ301

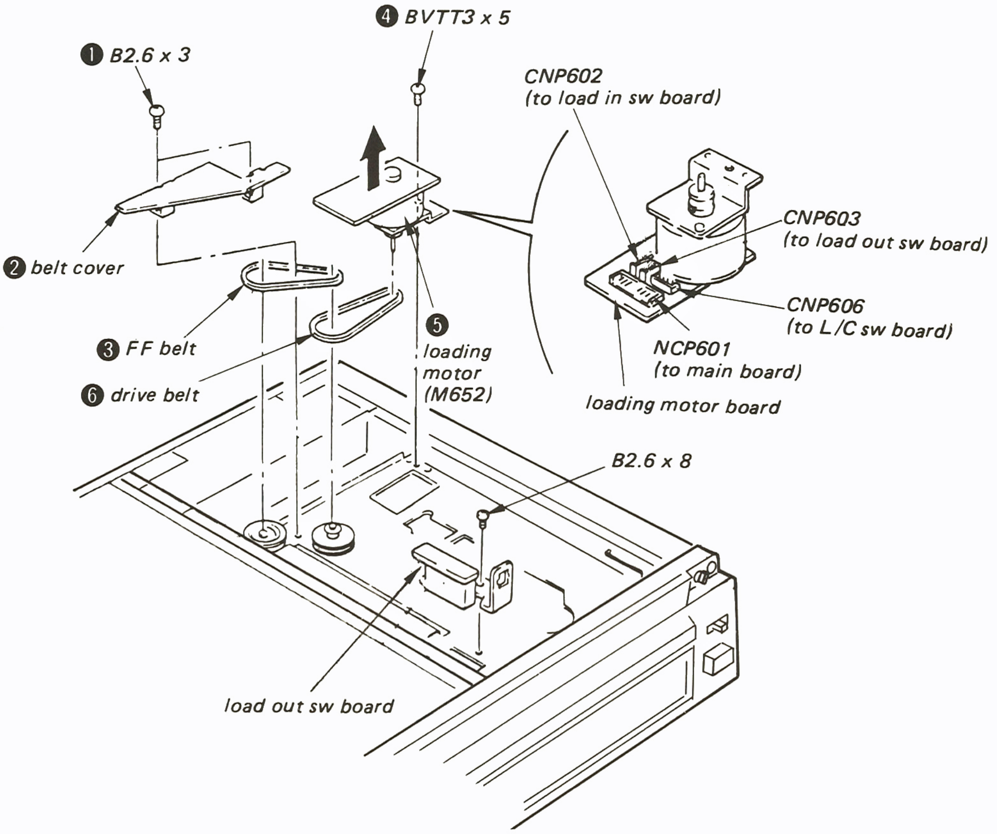
ROPE STRINGING


pulley (B)
❹
❸
pulley (C)
❺ Set the spring.
rope bracket
❷ Turn twice around pulley (C).
❶ Set the rope to rope bracket.

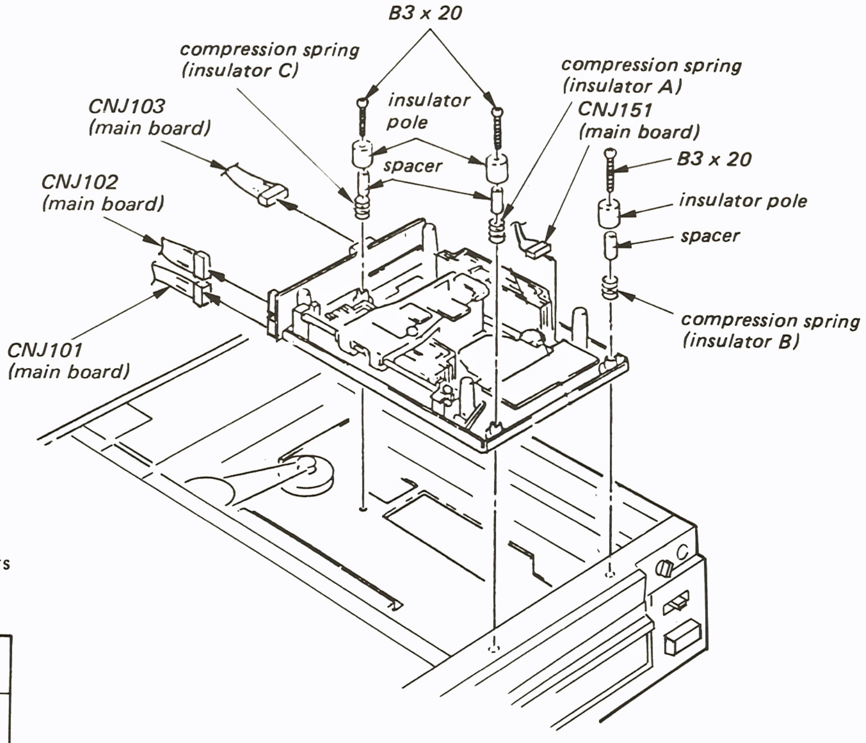
BOTTOM PLATE

Remove bottom plate by taking out 11 screws (BV3 x 8)
(It is possible to check main board from conductor side.)

LOADING MOTOR (M652), FF BELT, DRIVE BELT, LOAD OUT SW BOARD


❹ BVTT3 x 5
❶ B2.6 x 3
CNP602
(to load in sw board)
CNP603
(to load out sw board)
❷ belt cover
CNP606
(to L/C sw board)
❺
❸ FF belt
loading
motor
(M652)
NCP601
(to main board)
❻ drive belt
loading motor board
B2.6 x 8
load out sw board

BASE UNIT (BU-1E)


B3 x 20
compression spring
(insulator C)
compression spring
(insulator A)
CNJ103
(main board)
insulator
pole
CNJ151
(main board)
spacer
B3 x 20
CNJ102
(main board)
insulator pole
spacer
compression spring
(insulator B)
CNJ101
(main board)

Note (1): When replacing BU-1E, refer to "NOTES ON HANDLING BASE UNIT (BU-1E)" on page 6 to prevent damage caused by static electricity.

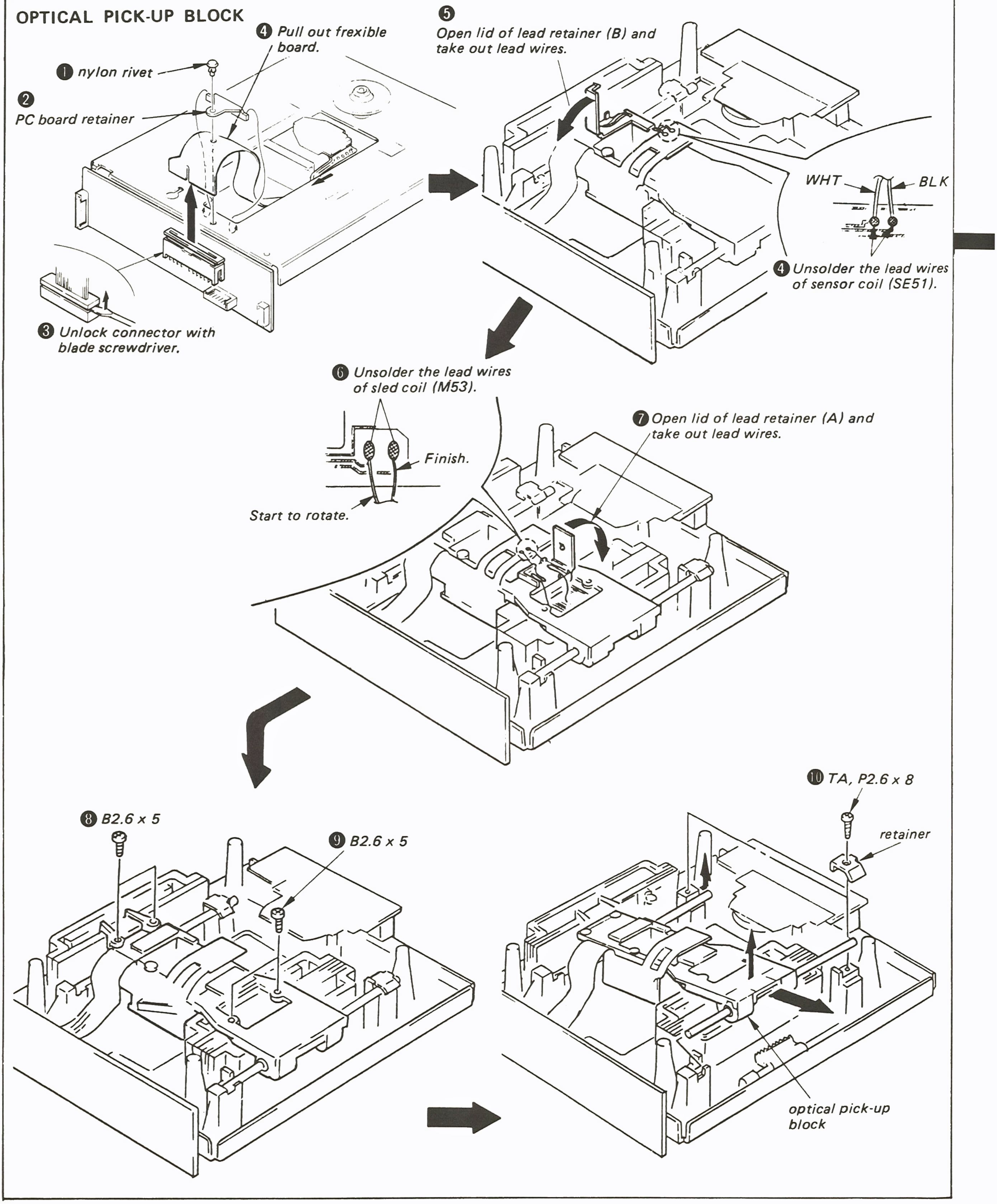
Note (2): Each compression spring (insulator) differs in size and turns. When installing it, refer to the following list.

compression spring (insulator)	turn number	color
A	6	silver
B	4.5	gold
C	3.5	black

BASE UNIT (BU-1E)
(See page 23.)

Refer to "NOTES ON HANDLING BASE UNIT (BU-1E)" on page 6 to prevent damage caused by static electricity.

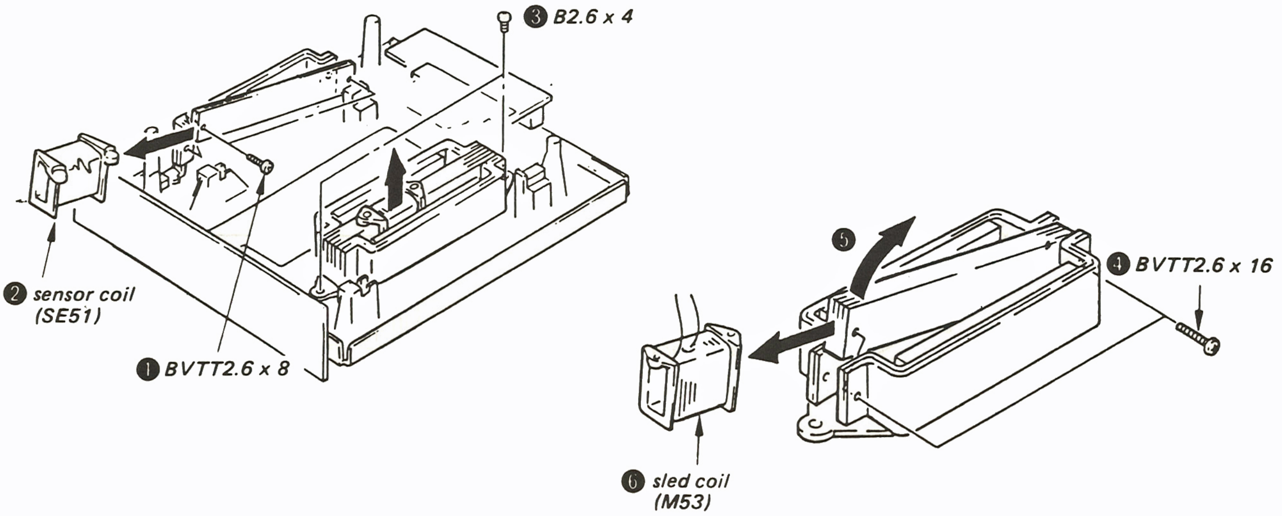
OPTICAL PICK-UP BLOCK


❶ nylon rivet
❷ PC board retainer
❸ Unlock connector with blade screwdriver.
❹ Pull out frexible board.
❺ Open lid of lead retainer (B) and take out lead wires.
WHT
BLK
❹ Unsolder the lead wires of sensor coil (SE51).
❻ Unsolder the lead wires of sled coil (M53).
Finish.
Start to rotate.
❼ Open lid of lead retainer (A) and take out lead wires.
❽ B2.6 x 5
❾ B2.6 x 5
❿ TA, P2.6 x 8
retainer
optical pick-up block

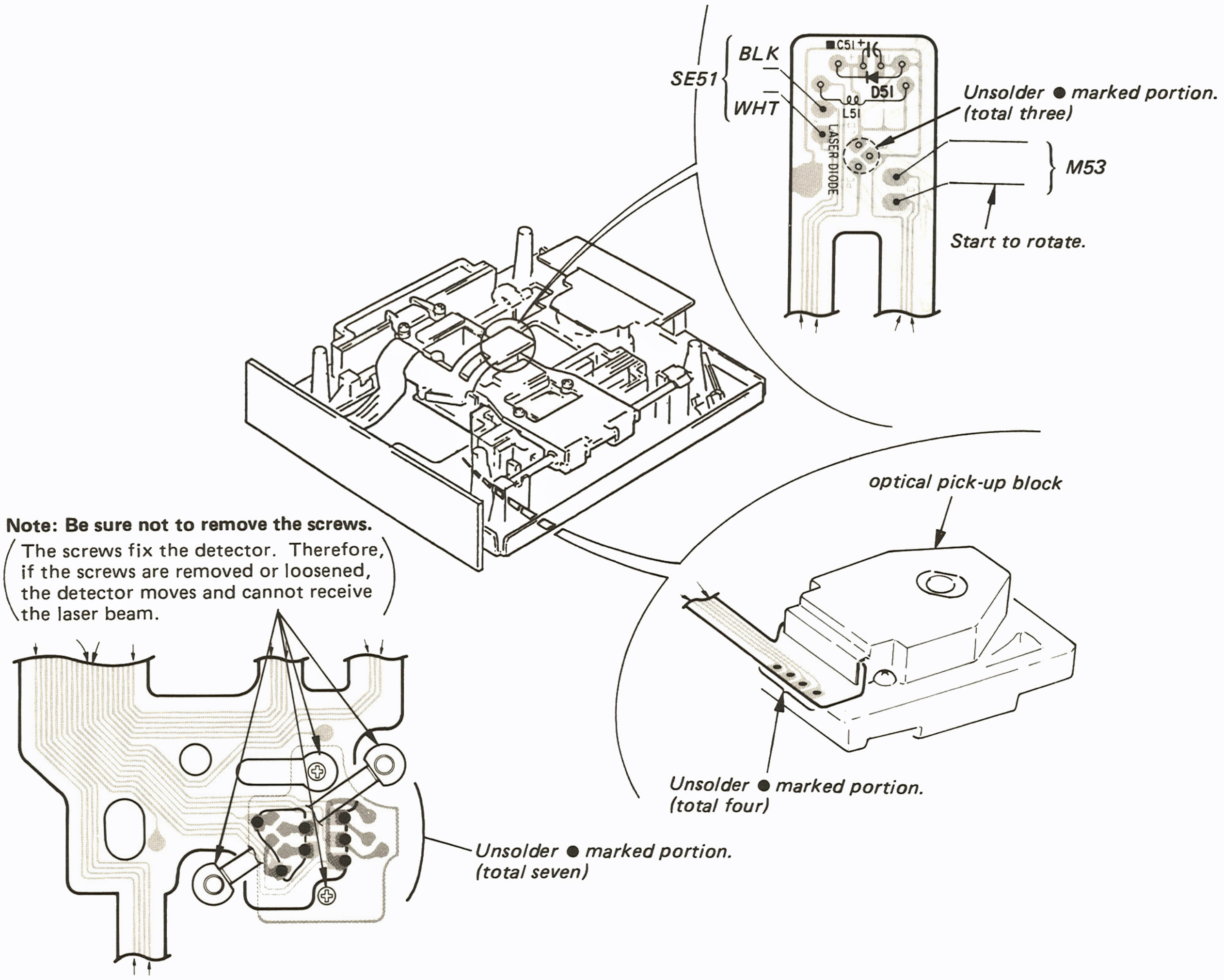
SLED COIL (M53), SENSOR COIL (SE51)

❶, ❷ : *sensor coil (SE51)*

❸～❻ : *sled coil (M53)*


❸ B2.6 x 4
❷ sensor coil (SE51)
❶ BVTT2.6 x 8
❺
❹ BVTT2.6 x 16
❻ sled coil (M53)

FLEXIBLE BOARD


SE51
BLK
WHT
C51
D51
L51
LASER DIODE
M53
optical pick-up block

Unsolder ● marked portion. (total three)

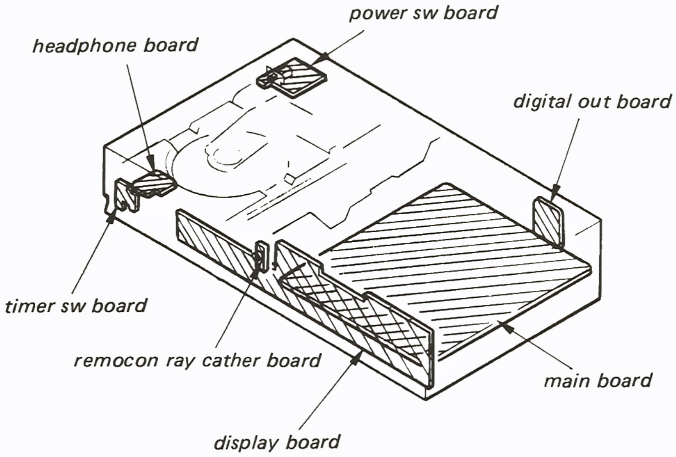
Start to rotate.

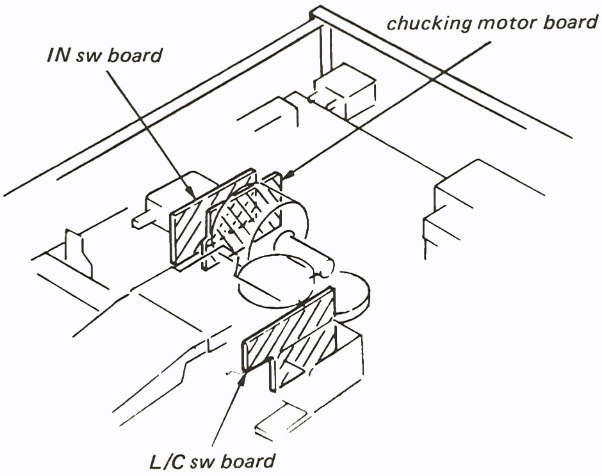
Unsolder ● marked portion. (total four)

Note: Be sure not to remove the screws.
The screws fix the detector. Therefore, if the screws are removed or loosened, the detector moves and cannot receive the laser beam.

Unsolder ● marked portion. (total seven)

CIRCUIT BOARDS LOCATION


power sw board
headphone board
digital out board
timer sw board
remocon ray cather board
main board
display board

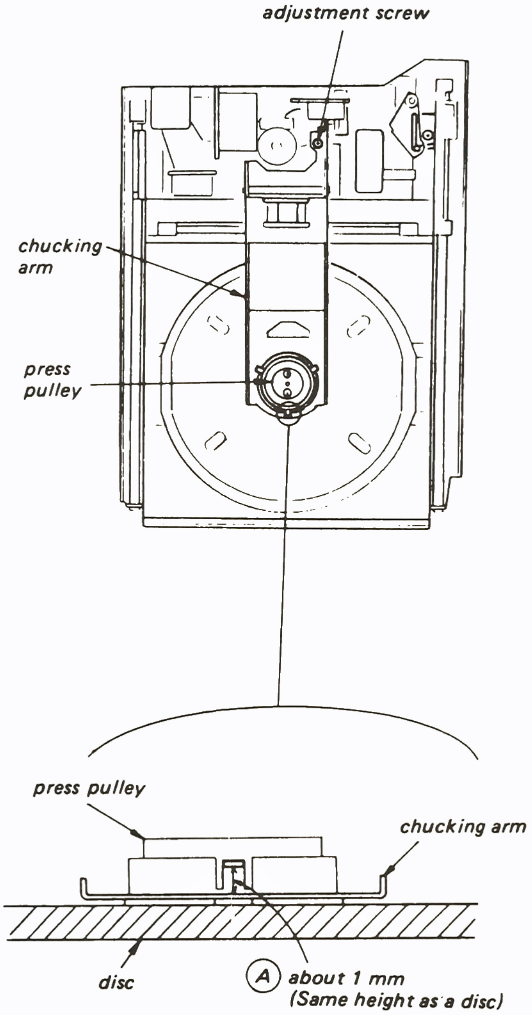

chucking motor board
IN sw board
L/C sw board

SECTION 3
ADJUSTMENTS

3-1. MECHANICAL ADJUSTMENT
CHUCKING ARM HEIGHT ADJUSTMENT

Adjust the height of portion Ⓐ with disc inserted and disc table closed.

Repeat loading and confirm that chucking arm does not touch disc pulley.


adjustment screw
chucking arm
press pulley
press pulley
chucking arm
disc
Ⓐ about 1 mm
(Same height as a disc)

3-2. ELECTRICAL ADJUSTMENTS

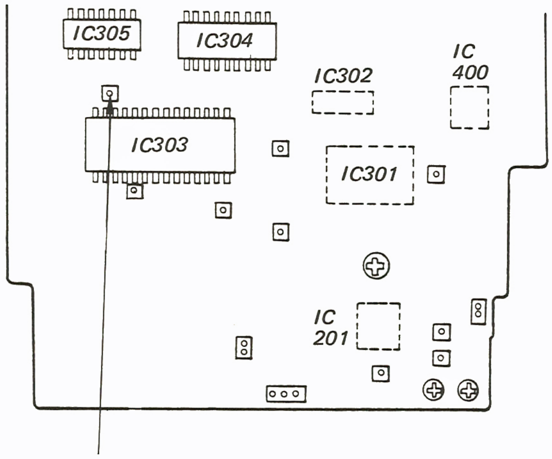
1. Perform adjustments in the order given.
2. Use YEDS-18 disc (3-702-101-01) unless otherwise indicated.
3. Use the oscilloscope with more than 10 MΩ impedance.

Adjustment Mode

1. Connect main board test point ADJ and ground.
   (This is to prevent the disc table from opening even though pits are not read, by making microcomputer IC303 pin ㊳ low.)
2. Turn POWER switch on.
   (To reset microcomputer.)

   After adjustment, remove the lead wire connecting test point ADJ and ground.

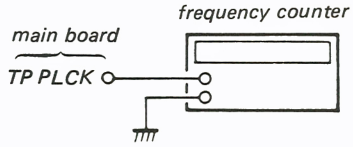
Adjustment Location: main board


IC305
IC304
IC302
IC 400
IC303
IC301
IC 201

test point ADJ.
(Connect this test point to ground.)

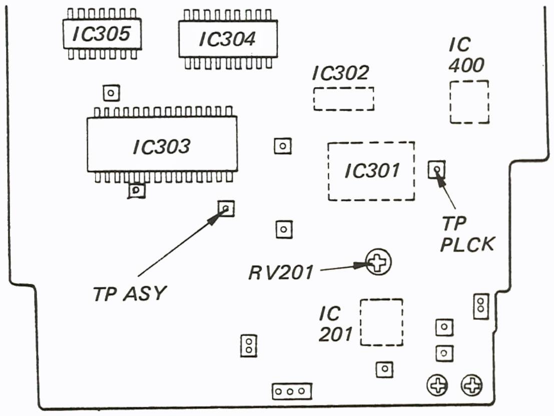
RF PLL Adjustment

Procedure:


frequency counter
main board
TP PLCK

1. Connect main board test point TP ASY and ground.
2. Connect the frequency counter to main board test point TP PLCK.
3. Turn POWER switch ON (stop mode).
4. Adjust main board RV201 so that the reading on frequency counter is 4.3218 MHz ±20 kHz.
5. Remove the lead wire connecting in step 1.
6. Put disc (YEDS-18) in and press ▷ PLAY button.
7. Confirm that reading on frequency counter is 4.3218 MHz.

Adjustment Location: main board


IC305
IC304
IC302
IC 400
IC303
IC301
TP PLCK
TP ASY
RV201
IC 201

REFERENCE

Focus/Tracking Gain Adjustment

A frequency responce analyzer is necessary in order to perform this adjustment exactly.

However, this gain has a margin, so even if it is slightly off, there is no problem. Therefore, do not perform this adjustment.

Focus/tracking gain determines the pick-up follow-up (vertical and horizontal) relative to mechanical noise and mechanical shock when the 2-axis device operate.

However, as these reciprocate, the adjustment is at the point where both are satisfied.

- When gain is raised, the noise when the 2-axis device operates increases.
- When gain is lowered, mechanical shock and skipping occurs more easily.
- When gain adjustment is off, the symptoms below appear.

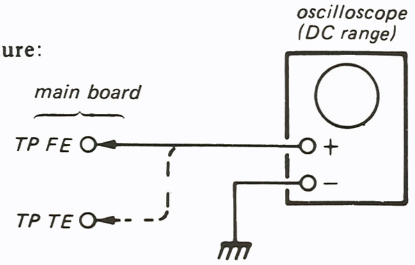
Gain / Symptoms	Focus	Tracking
● The time until music starts becomes longer for STOP →▷PLAY or automatic selection (⏮, ⏭ buttons pressed.) (Normally takes about 1 seconds.)	low	low or high
● Music does not start and disc continues to rotate for STOP→▷PLAY or automatic selection. (⏮, ⏭ buttons pressed.)	–	low
● Disc table opens shortly after STOP→▷PLAY.	low or high	–
● Sound is interrupted during PLAY. Or time counter display stops progressing.	–	low
● More noise during 2-axis device operation.	high	high

The following is a simple adjustment method.

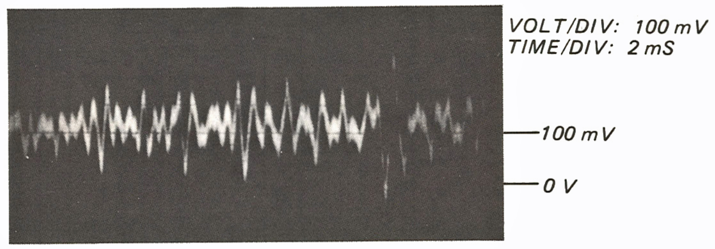
– Primary Adjustment –

Note: Since exact adjustment cannot be performed, remember the positions of the controls before performing the adjustment. If the positions after the primary adjustment are only a little different, return the controls to the original position.

Procedure:

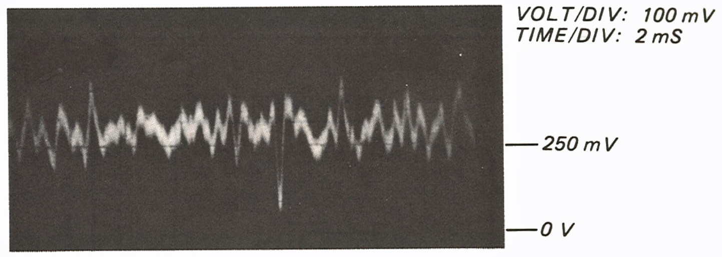


1. Keep the set horizontal.
   (If the set is not horizontal, this adjustment cannot be performed due to the gravity against the 2 axis device.)
2. Put set in adjustment mode. (See page 27.)
3. Insert disc (YEDS-18) and press ▷PLAY button.
4. Connect oscilloscope to main board TP FE.
5. Adjustment RV203 so that the waveform is as shown in the figure below. (focus gain adjustment)

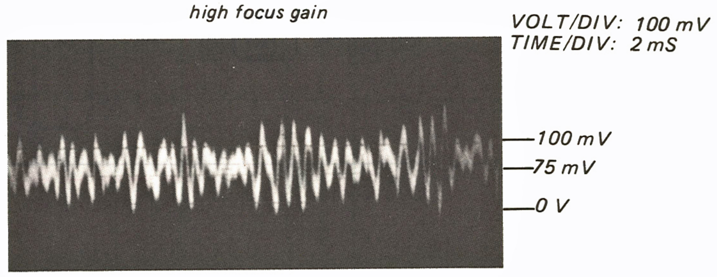


- Incorrent Examples (DC level changes more than on adjusted waveform)

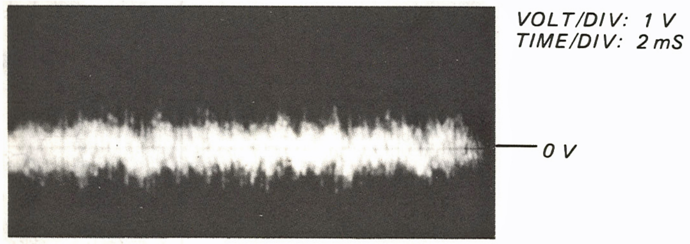
low focus gain



high focus gain

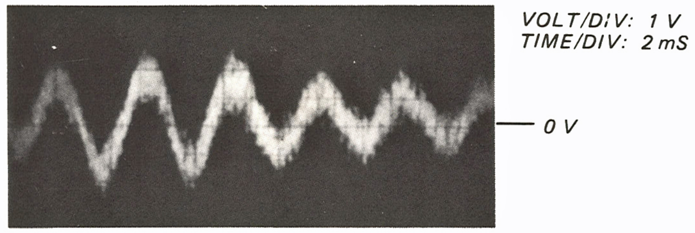


6. Connect oscilloscope to main board TP TE.
7. Adjust RV202 so that the waveform is as shown in the figure below. (tracking gain adjustment)

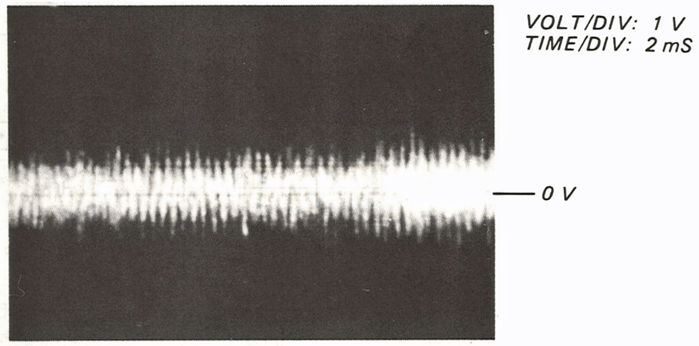


- Incorrect Examples (fundamental wave appears)

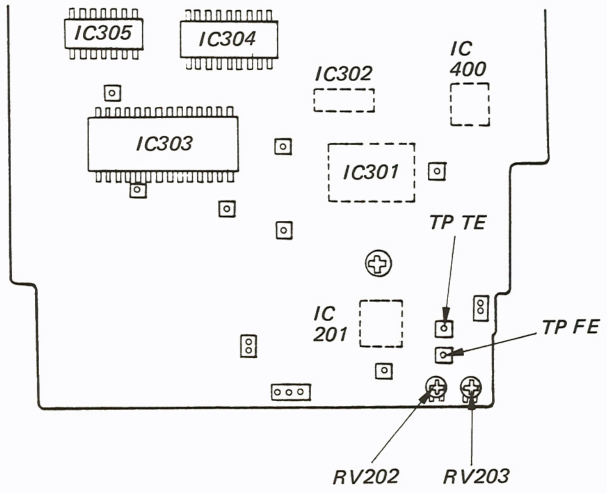
low tracking gain



high tracking gain
(higher fundamental wave than for low gain)

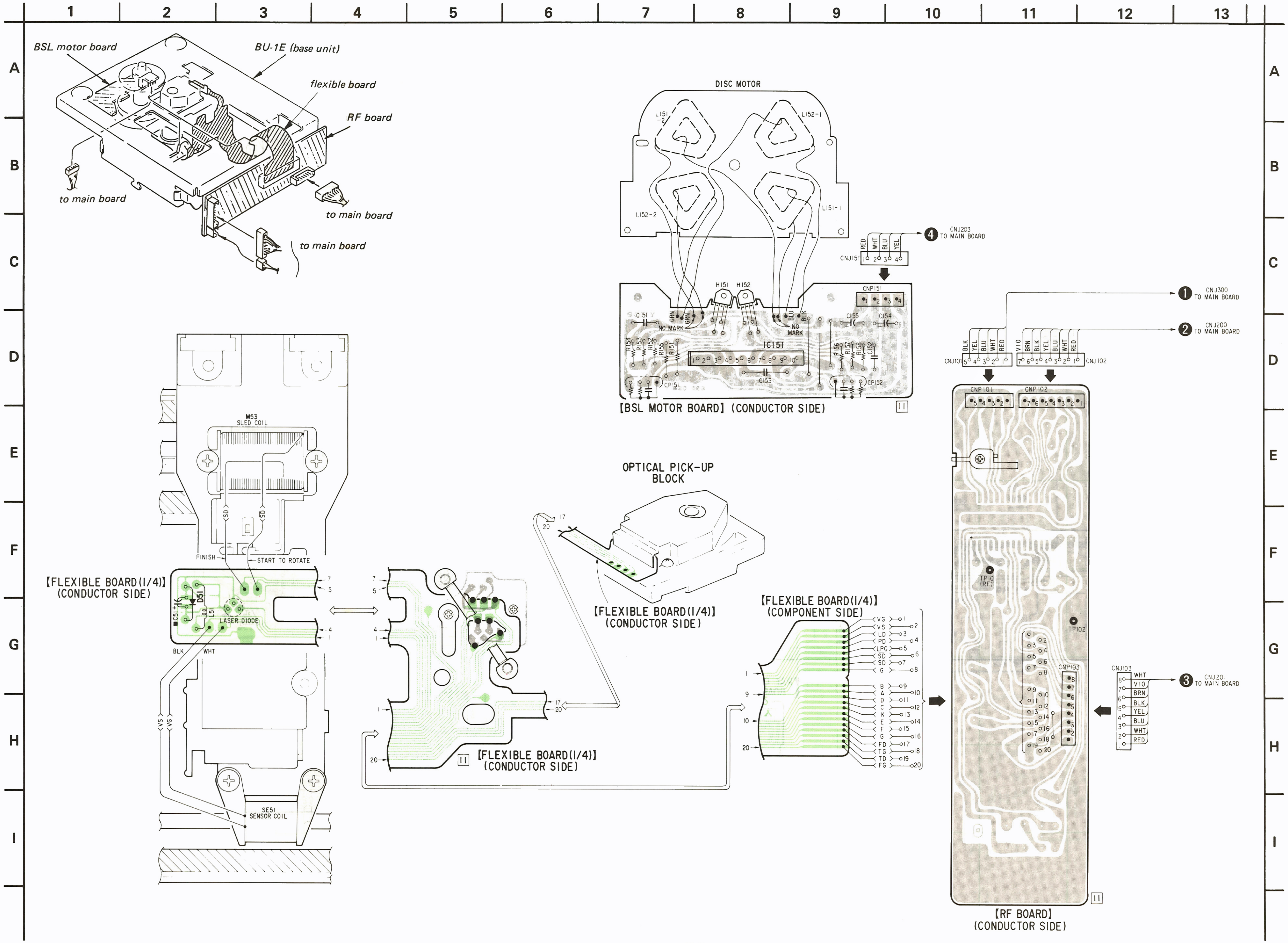


Adjustment Location: main board



SECTION 4
DIAGRAMS

4-1. MOUNTING DIAGRAM – BU-1E (BASE UNIT) SECTION –

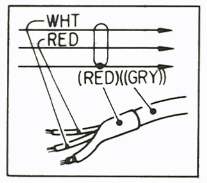

1
2
3
4
5
6
7
8
9
10
11
12
13
A
B
C
D
E
F
G
H
I
BSL motor board
BU-1E (base unit)
flexible board
RF board
to main board
to main board
to main board
DISC MOTOR
L151-2
L152-1
L152-2
L151-1
RED
WHT
BLU
YEL
CNJ151
CNJ203
TO MAIN BOARD
4
H151
H152
CNP151
C151
GRN
GRN
BLU
BLK
NO MARK
NO MARK
C155
C154
IC151
R154
R153
R152
R155
R151
R156
R157
R158
C152
C153
CP151
CP152
[BSL MOTOR BOARD] (CONDUCTOR SIDE)
1
CNJ300
TO MAIN BOARD
2
CNJ200
TO MAIN BOARD
BLK
YEL
BLU
WHT
RED
VIO
BRN
BLK
YEL
BLU
WHT
RED
CNJ101
CNJ102
CNP101
CNP102
TP101 (RF)
TP102
CNP103
CNJ103
WHT
VIO
BRN
BLK
YEL
BLU
WHT
RED
3
CNJ201
TO MAIN BOARD
[RF BOARD] (CONDUCTOR SIDE)
M53 SLED COIL
SD
SD
FINISH
START TO ROTATE
[FLEXIBLE BOARD(1/4)] (CONDUCTOR SIDE)
D51
C51
L51
LASER DIODE
BLK
WHT
VS
VG
SE51 SENSOR COIL
OPTICAL PICK-UP BLOCK
[FLEXIBLE BOARD(1/4)] (CONDUCTOR SIDE)
[FLEXIBLE BOARD(1/4)] (CONDUCTOR SIDE)
[FLEXIBLE BOARD(1/4)] (COMPONENT SIDE)
VG
VS
LD
PD
LPG
SD
SD
G
B
A
D
C
K
E
F
G
FD
TG
TD
FG

● SEMICONDUCTOR LOCATION

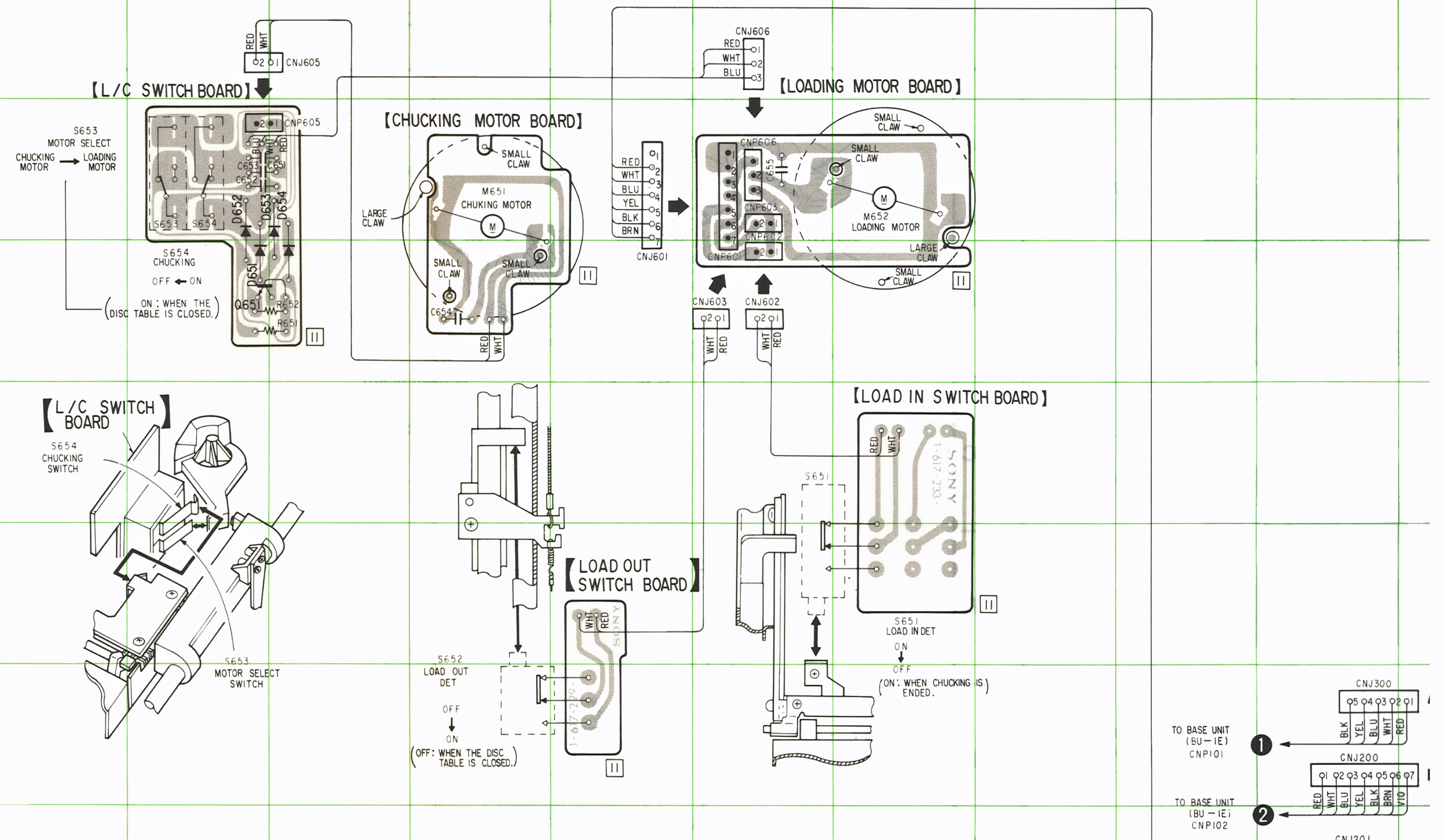
Ref. No.	Location	Ref. No.	Location	Ref. No.	Location
D200	F-20	D862	H-26	Q202	E-20
D320	E-24			Q203	B-20
D321	E-24	IC201	C-19	Q204	B-20
D361	D-27	IC202	F-18	Q361	D-27
D362	D-26	IC203	E-18	Q362	D-27
D363	D-27	IC301	C-21	Q363	D-28
D364	D-27	IC302	D-22	Q460	B-31
D365	D-27	IC303	F-21	Q560	B-31
D367	D-26	IC304	F-23	Q651	C-9
D368	E-25	IC305	G-23	Q700	H-6
D651	C-9	IC400	B-22	Q701	H-6
D652	B-9	IC401	B-24	Q702	H-5
D653	B-10	IC410	C-26	Q703	H-5
D654	C-10	IC480	E-24	Q704	H-4
D700	G-13	IC481	A-22	Q850	G-26
D701	G-14	IC510	B-26		
D702	G-14	IC550	B-31		
D703	H-11	IC701	I-10		
D704	H-10	IC710	J-6		
D705	J-9	IC801	F-27		
D801	H-28	IC802	F-28		
D850	H-24	IC803	E-27		
D851	H-24	IC804	E-28		
D852	H-24	IC805	B-23		
D856	F-23	IC806	C-23		
D857	G-26	IC850	F-24		
D858	G-26	IC851	G-25		
D859	G-25				
D860	G-25	Q200	B-21		
D861	H-26	Q201	E-20		

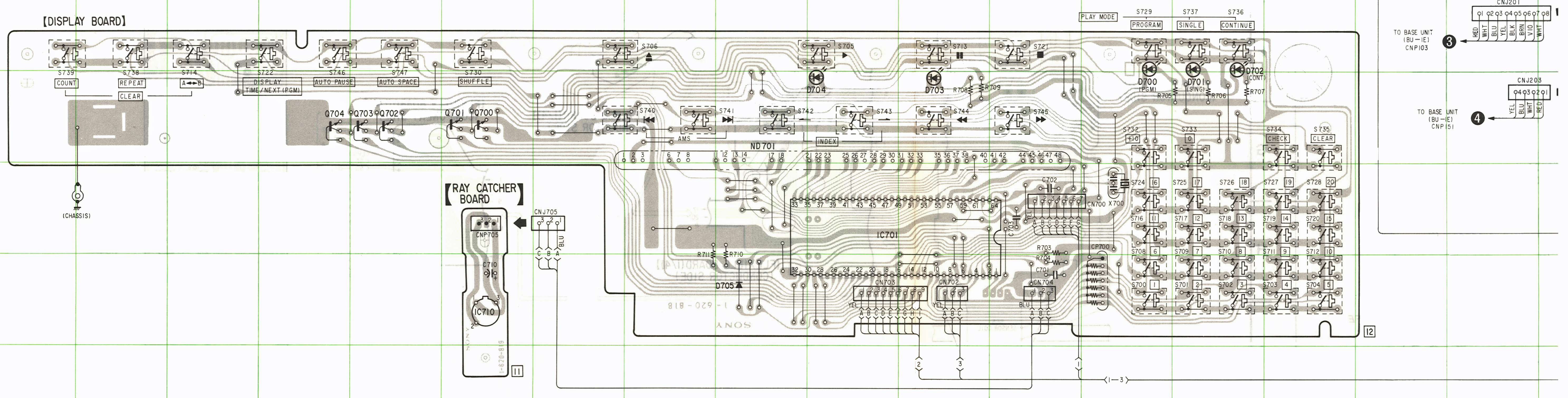
Note:

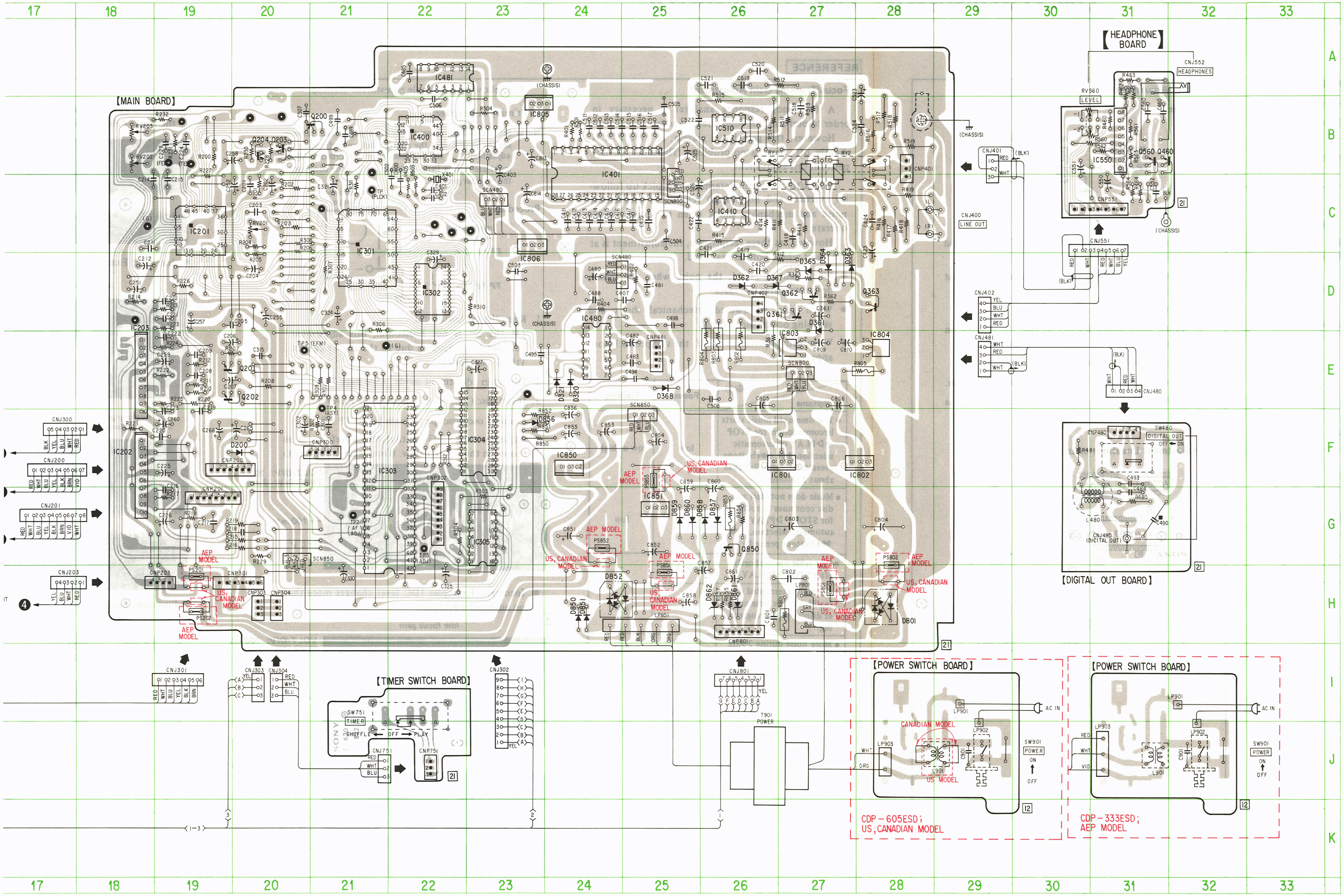
- Color code or sleeving over the end of the jacket.


WHT
RED
(RED)(GRY)

- ○— : parts extracted from the component side.
- ●— : parts extracted from the conductor side.
- ■ : part mounted on the conductor side.


CNJ605
RED
WHT
【L/C SWITCH BOARD】
CNP605
S653
MOTOR SELECT
CHUCKING MOTOR → LOADING MOTOR
S653
S654
C653
C651
C652
D652
D653
D654
D651
Q651
R652
R651
BLU
WHT
RED
S654
CHUCKING
OFF ← ON
(ON : WHEN THE DISC TABLE IS CLOSED.)
11
【CHUCKING MOTOR BOARD】
SMALL CLAW
LARGE CLAW
M651
CHUKING MOTOR
SMALL CLAW
SMALL CLAW
C654
RED
WHT
CNJ601
RED
WHT
BLU
YEL
BLK
BRN
CNJ606
RED
WHT
BLU
【LOADING MOTOR BOARD】
CNP606
C655
CNP603
CNP602
CNP601
SMALL CLAW
SMALL CLAW
M652
LOADING MOTOR
LARGE CLAW
SMALL CLAW
CNJ603
CNJ602
WHT
RED
【L/C SWITCH BOARD】
S654
CHUCKING SWITCH
S653
MOTOR SELECT SWITCH
【LOAD OUT SWITCH BOARD】
S652
LOAD OUT DET
OFF
ON
(OFF: WHEN THE DISC TABLE IS CLOSED.)
【LOAD IN SWITCH BOARD】
SONY
1-617-233-
S651
S651
LOAD IN DET
ON
OFF
(ON: WHEN CHUCKING IS ENDED.)
CNJ300
BLK
YEL
BLU
WHT
RED
TO BASE UNIT (BU-1E) CNP101
❶
CNJ200
TO BASE UNIT (BU-1E) CNP102
❷
VIO


【DISPLAY BOARD】
S739
COUNT
S738
REPEAT
S714
A↔B
CLEAR
S722
DISPLAY
TIME/NEXT(PGM)
S746
AUTO PAUSE
S747
AUTO SPACE
S730
SHUFFLE
S706
S705
S713
S721
PLAY MODE
S729
PROGRAM
S737
SINGLE
S736
CONTINUE
D704
D703
R708
R709
D700 (PGM)
D701 (SING)
D702 (CONT)
R705
R706
R707
S740
S741
S742
S743
S744
S745
AMS
INDEX
ND701
Q704
Q703
Q702
Q701
Q700
S732 +10
S733 0
S734 CHECK
S735 CLEAR
S724 16
S725 17
S726 18
S727 19
S728 20
S716 11
S717 12
S718 13
S719 14
S720 15
S708 6
S709 7
S710 8
S711 9
S712 10
S700 1
S701 2
S702 3
S703 4
S704 5
IC701
C702
CN700
X700
R703
C701
CN704
CN703
CN702
CP700
R711
R710
D705
YEL
BLU
12
(CHASSIS)
【RAY CATCHER BOARD】
CNJ705
CNP705
C710
IC710
BLU
11
CNJ201
TO BASE UNIT (BU-1E) CNP103
❸
CNJ203
TO BASE UNIT (BU-1E) CNP151
❹
(1-3)


17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33
A B C D E F G H I J K
[MAIN BOARD]
[HEADPHONE BOARD]
[DIGITAL OUT BOARD]
[TIMER SWITCH BOARD]
[POWER SWITCH BOARD]
CDP-605ESD; US, CANADIAN MODEL
CDP-333ESD; AEP MODEL
AEP MODEL
US, CANADIAN MODEL
CANADIAN MODEL
US MODEL
IC201
IC202
IC203
IC301
IC302
IC303
IC304
IC305
IC400
IC401
IC410
IC480
IC481
IC510
IC550
IC801
IC802
IC803
IC804
IC805
IC806
IC850
IC851
CNJ300
CNJ200
CNJ201
CNJ203
CNJ301
CNJ303
CNJ304
CNJ302
CNJ801
CNJ400 LINE OUT
CNJ401
CNJ402
CNJ481
CNJ480 (DIGITAL OUT)
CNJ551
CNJ552 HEADPHONES
RV560 LEVEL
SW480 DIGITAL OUT OFF ← ON
SW751 TIMER SHUFFLE OFF PLAY
SW901 POWER ON OFF
T901 POWER
AC IN
(CHASSIS)
TP5 (EFM)
TP4 (ASY)
TP2 AF ADJ
TP3 (ADJ)
TP (PLCK)
21
12

4-3. SCHEMATIC DIAGRAM

• See page 42 for notes.

OPTICAL PICK-UP BLOCK
[RF BOARD]
IC101 RF AMP/LASER ON CIRCUIT/DROPOUT DETECTION/MIDPOINT VOLTAGE GENERATOR
IC301 CXD1125Q DIGITAL SIGNAL PROCESSOR/CLV SERVO/DIGITAL OUT
[BSL MOTOR BOARD]
IC151 TA7256P DISC MOTOR DRIVE
IC302 LC3516AML RAM
IC305 TC74HC02P NOR
IC481 MC74HC74C D-FF
IC480 TC74HCU04P INVERTER
[DIGITAL OUT BOARD]
IC400 CXD1088Q DIGITAL FILTER
IC401 TDA1541 D/A CONVERTER
IC410 NE5532P AUDIO AMP
IC510 NE5532P AUDIO AMP
[HEADPHONE BOARD]
IC550 NJM4560S HEADPHONE AMP
Q460,560 2SC3622A-K MUTING
CN400 LINE OUT
IC805 NJM7805A REG.
IC806 NJM7905A REG.
[MAIN BOARD]
IC203 TA7256P FOCUS/TRACKING COIL DRIVE
IC202 TA7256P SLED COIL DRIVE
IC201 CXA1082AQ FOCUS/TRACKING/SLED/CLV SERVO, VCO
SEQUENCER
Q201,202 DTC144ES SWITCH
Q204 2SC634SP MUTING (FOCUS ERROR)
Q200,203 DTA144ES SWITCH
IC305 TC74HC02P NOR
IC303 MSM6404A-181RS MECHANISM CONTROL
IC304 LC6523H-3270 DEFECT CONTROL
IC480 TC74HCU04P INVERTER
IC202 TA7256P LOADING/CHUCKING MOTOR DRIVE
[LOAD IN SWITCH BOARD]
[LOAD OUT SWITCH BOARD]
[LOADING MOTOR BOARD]
[L/C SWITCH BOARD]
[CHUCKING MOTOR BOARD]
[DISPLAY BOARD]
IC701 CXP5016 DISPLAY CONTROL
ND701 FLUORESCENT INDICATOR TUBE
[RAY CATCHER BOARD]
IC710 SBX-1393 RCV AMP
[TIMER SWITCH BOARD]
Q700 VR3683S
D701 AY3638S
D702 PG3422SY
D703 AA5534S
D704 EB5534S
Q701-704 DTC114ES LED DRIVE
Q361 DTA144ES SWITCH
Q362 DTA144ES RELAY DRIVE (MUTING)
Q363 DTC114ES RELAY DRIVE (EMPHASIS)
IC803 μPC78L12 REG.
IC801 μPC7815H REG.
IC804 NJM79L12A REG.
IC802 μPC7915H REG.
IC850 NJM7805A REG.
IC851 NJM7905A REG.
CDP-333ESD: AEP MODEL
[POWER SWITCH BOARD]
CDP-605ESD: US, CANADIAN MODEL
[POWER SWITCH BOARD]
T901 POWER

Note on Schematic Diagram:

- All capacitors are in µF unless otherwise noted. pF: µµF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼ W or less unless otherwise specified.
- ⟶ : signal path.
- ▭ : fusible resistor.
- ━━ : B+ bus.
- ▬ ▬ ▬ : B– bus.
- ▭ : adjustment for repair.
- Voltages are dc with respect to ground unless otherwise noted.
- Readings are taken under no-signal conditions with a VOM (50 kΩ/V) when PLAY MODE siwtch set to CONTINUE.
  no mark : STOP
  ( ): PLAY
  < >: DIGITAL OUT switch ON.
- Waveforms are taken to ground in STOP mode by using oscilloscope.
  Voltage variations may be noted due to normal production tolerances.

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

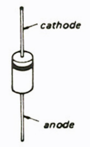
Note: Les composants identifiés par un tramé et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

- Switch

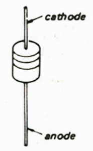
Ref. No.	Switch	Position
S651	LOAD IN DET	ON
S652	LOAD OUT DET	OFF
S653	MOTOR SELECT	CHUCKING
S654	CHUCKING	ON
S700	1	OFF
S701	2	OFF
S702	3	OFF
S703	4	OFF
S704	5	OFF
S705	▶	OFF
S706	OPEN/CLOSE	OFF
S708	6	OFF
S709	7	OFF
S710	8	OFF
S711	9	OFF
S712	10	OFF
S713	❚❚	OFF
S714	A ↔ B	OFF
S716	11	OFF
S717	12	OFF
S718	13	OFF
S719	14	OFF
S720	15	OFF
S721	■	OFF
S722	DISPALY; TIME/ENXT(PGM)	OFF
S724	16	OFF
S725	17	OFF
S726	18	OFF
S727	19	OFF
S728	20	OFF
S729	PROGRAM	OFF
S730	SHUFFLE	OFF
S732	+10	OFF
S733	0	OFF
S734	CHECK	OFF
S735	CLEAR	OFF
S736	CONTINUE	OFF
S737	SINGLE	OFF
S738	REPEAT	OFF
S739	COUNT	OFF
S740	⏮	OFF
S741	⏭	OFF
S742	◢—	OFF
S743	—◣	OFF
S744	◀◀	OFF
S745	▶▶	OFF
S746	AUTO PAUSE	OFF
S747	AUTO SPACE	OFF
SW480	DIGITAL OUT	OFF
SW751	TIMER	OFF
SW901	POWER	OFF

- **Semiconductor Lead Layouts**

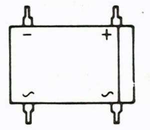
10E2
11E2


cathode
anode

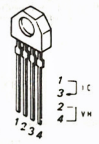
1SS119
1SS132
RD4.7ES-B2
RD7.5ES-B
RD13ES-B1
RD33ES-B4


cathode
anode

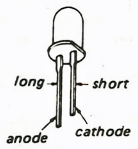
DF02M
RDF02M



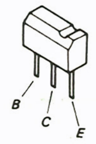
THS103A-1


1
3
IC
2
4
VH
1 2 3 4

AY3638S-1
EBG5534S
PG3668S
VR3638S-1


long
short
anode
cathode

2SA1428-Y



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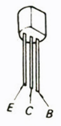
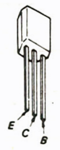
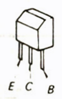


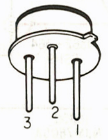
2SC634SP
DTA114ES
DTA144ES
DTC114ES
DTC144ES



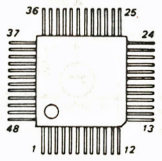
2SD774



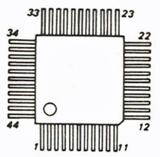
BX1393



CXA1082Q


36
25
37
24
48
13
1
12

CXD1088Q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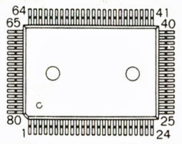
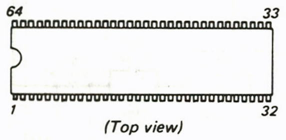
23
34
22
44
12
1
11

CXD1125Q


64
41
65
40
80
25
1
24

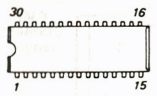
MARKING SIDE VIEW

CXP5016H-181RS



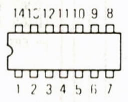
(Top view)

LC6523H-3270



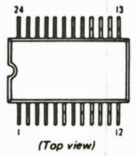
(Top view)

MC74HC74P
TC74HC02P
TC74HCU02P


14 13 12 11 10 9 8
1 2 3 4 5 6 7

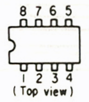
(Top view)

MSM5218-20GS



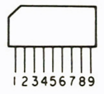
(Top view)

NE5532P

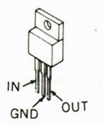


(Top view)

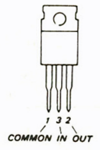
NJM4560S



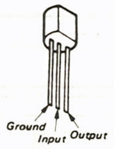
NJM7805A
µPC7815H



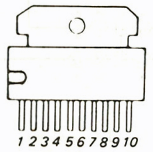
NJM7905A
µPC7915H


1 3 2
COMMON
IN
OUT

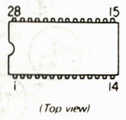
NJM79L12A


Ground
Input
Output

TA7256P

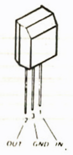

1 2 3 4 5 6 7 8 9 10

TDA1541-N5



(Top view)

µPC78L12


2 3 1
OUT
GND
IN

SECTION 5

EXPLODED VIEWS AND PARTS LIST

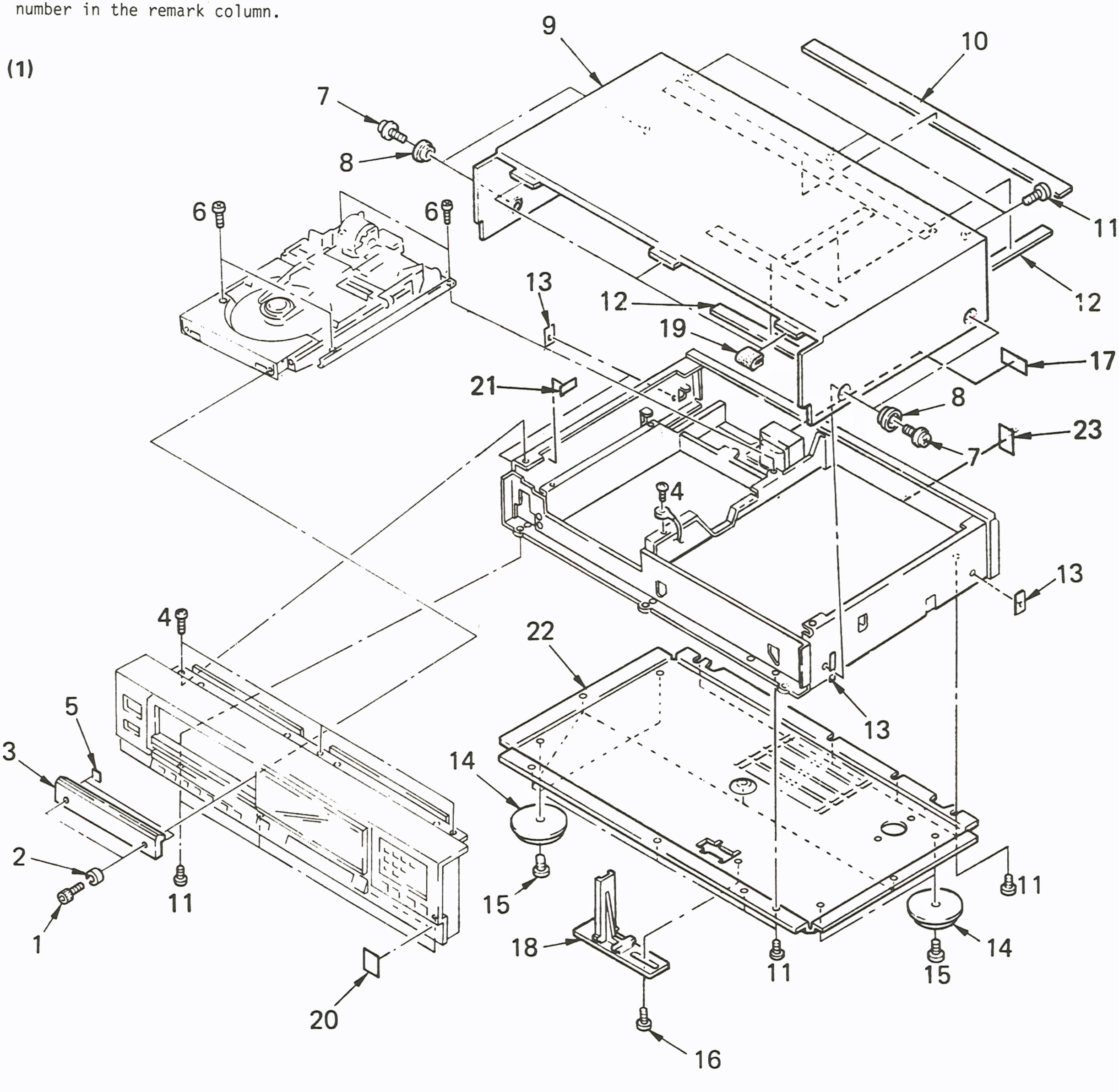
NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked " ★ " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The construction parts of an assembled part are indicated with a collation number in the remark column.

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

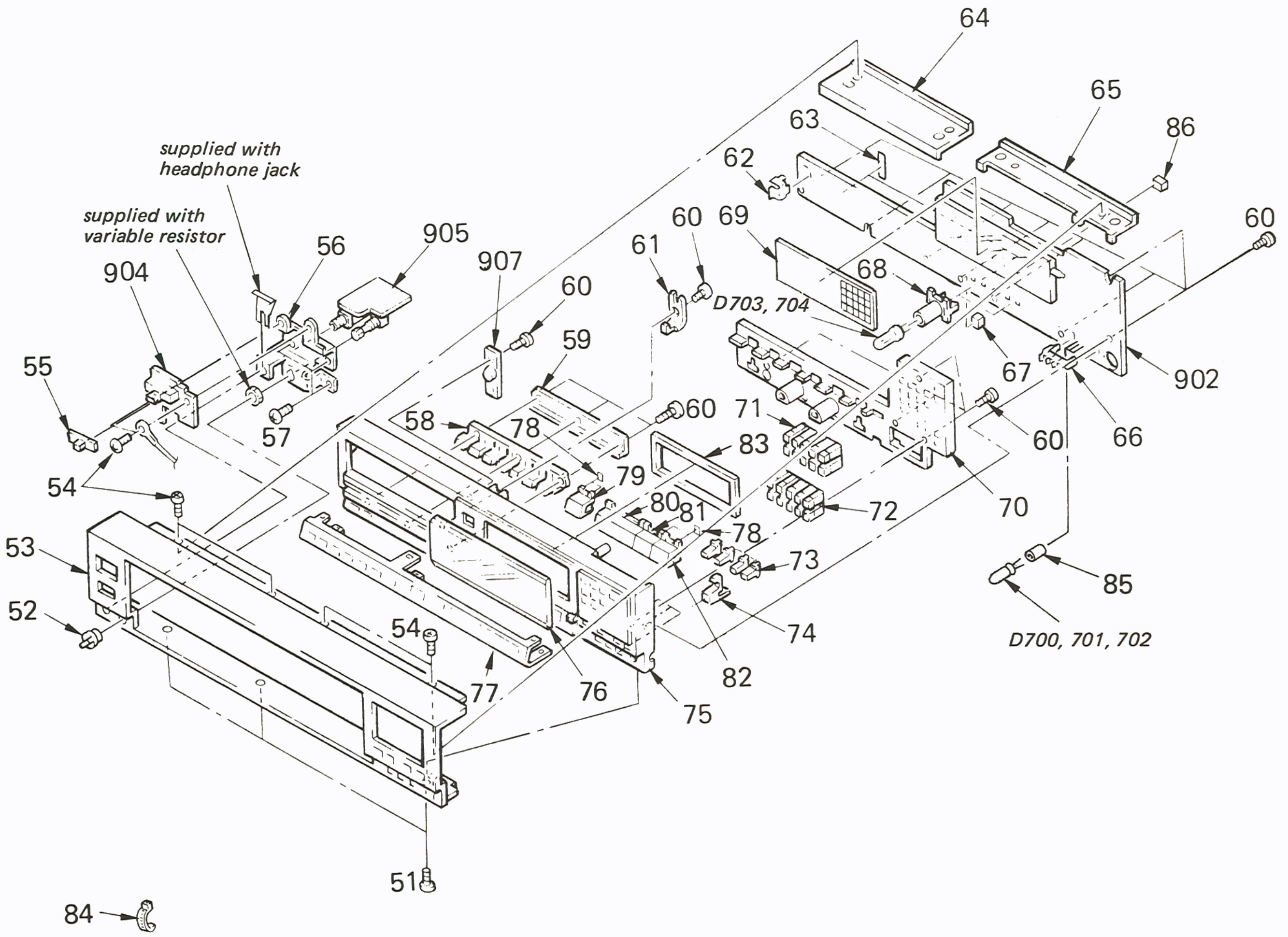
Les composants identifiés par une trame et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

(1)

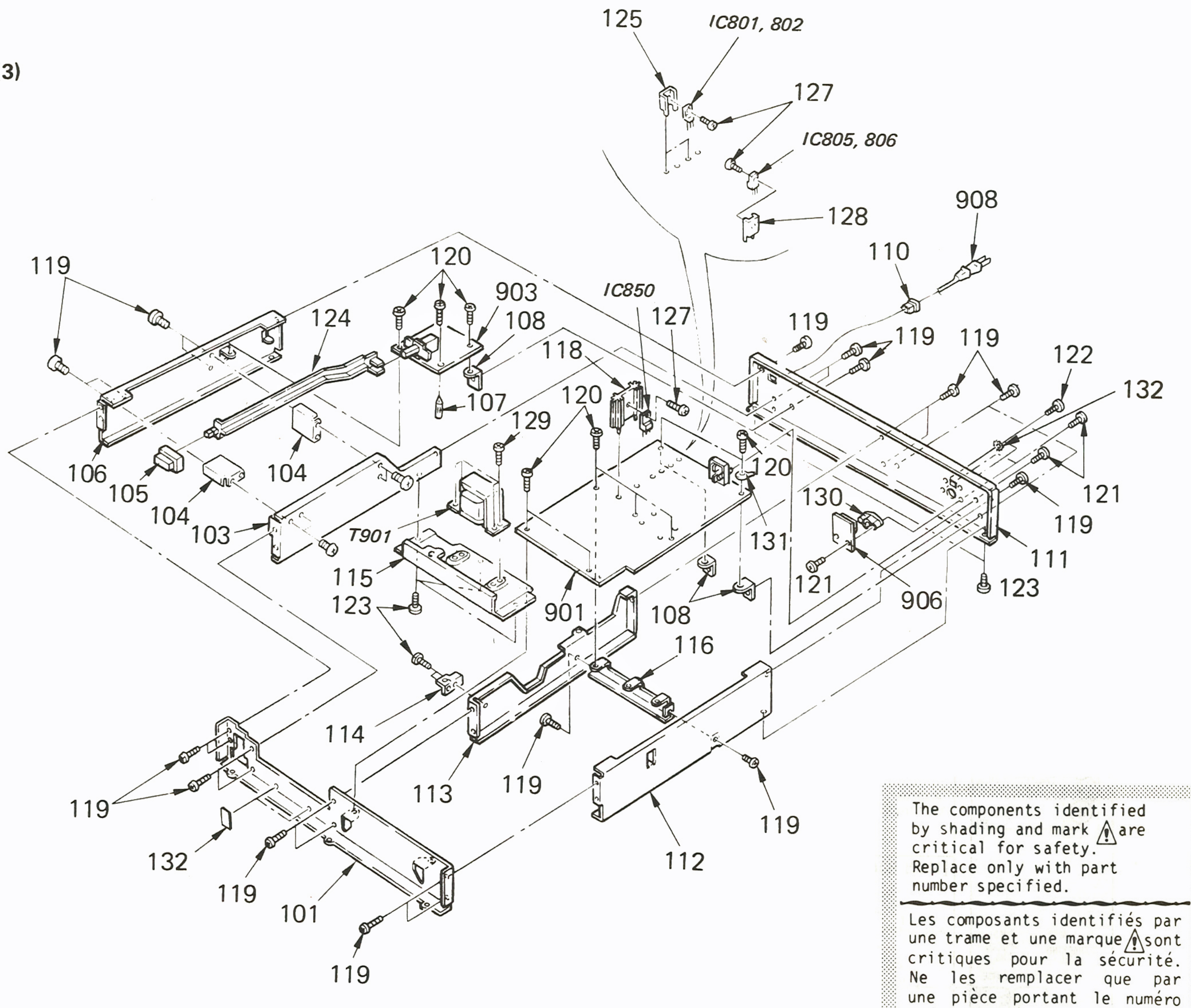


No.	Part No.	Description	Remarks
1	7-683-412-05	BOLT, HEXAGON SOCKET 2.6X6	
2	4-884-635-00	BASE, ORNAMENTAL	
3	4-913-154-01	PANEL, LOADING	
4	7-685-871-01	SCREW +BVTT 3X6 (S)	
5	*4-912-948-01	CUSHION, LOADING PANEL	
6	7-685-752-04	SCREW +BVTT 3X8 (S)	
7	4-886-821-01	SCREW, M3 CASE	
8	3-576-298-11	ESCUTCHEON	
9	4-913-162-01	CASE	
10	*4-913-183-01	DUMPER (A)	
11	3-703-685-31	SCREW (+BV 3X8)	
12	*4-913-184-01	DUMPER (B)	
13	*4-908-962-01	SHEET (C), INSULATING	
14	X-4910-447-1	FOOT ASSY	
15	7-685-882-09	SCREW +BVTT 4X10 (S)	
16	3-323-470-01	SCREW (B3X6), (+ -)	
17	4-885-838-00	(333ESD)...LABEL, CLASS 1	
18	*4-913-155-01	LEVER (B), TRANSPORT LOCK	
19	3-831-441-XX	CUSHION	
20	3-703-710-41	STICKER, SONY SYMBOL (12)	
21	*4-885-843-02	(333ESD)...LABEL, CAUTION, LASER	
22	*4-913-163-01	PLATE, BOTTOM	
23	3-703-680-00	(605ESD:US)..LABEL, CAUTION, SUB, NEW UL	

(2)


64
65
86
63
62
60
69
60
61
68
D703, 704
supplied with headphone jack
supplied with variable resistor
56
905
904
907
60
59
55
57
58
78
79
60
71
83
67
60
66
902
54
80
81
72
70
53
78
73
52
54
74
85
77
76
82
75
D700, 701, 702
51
84

(3)


125
IC801, 802
127
IC805, 806
128
908
110
119
120
903
IC850
127
124
108
118
107
120
129
119
119
119
122
132
106
105
104
104
103
T901
120
130
121
119
131
121
111
115
123
901
108
906
123
116
114
113
119
119
132
119
101
112
119
119

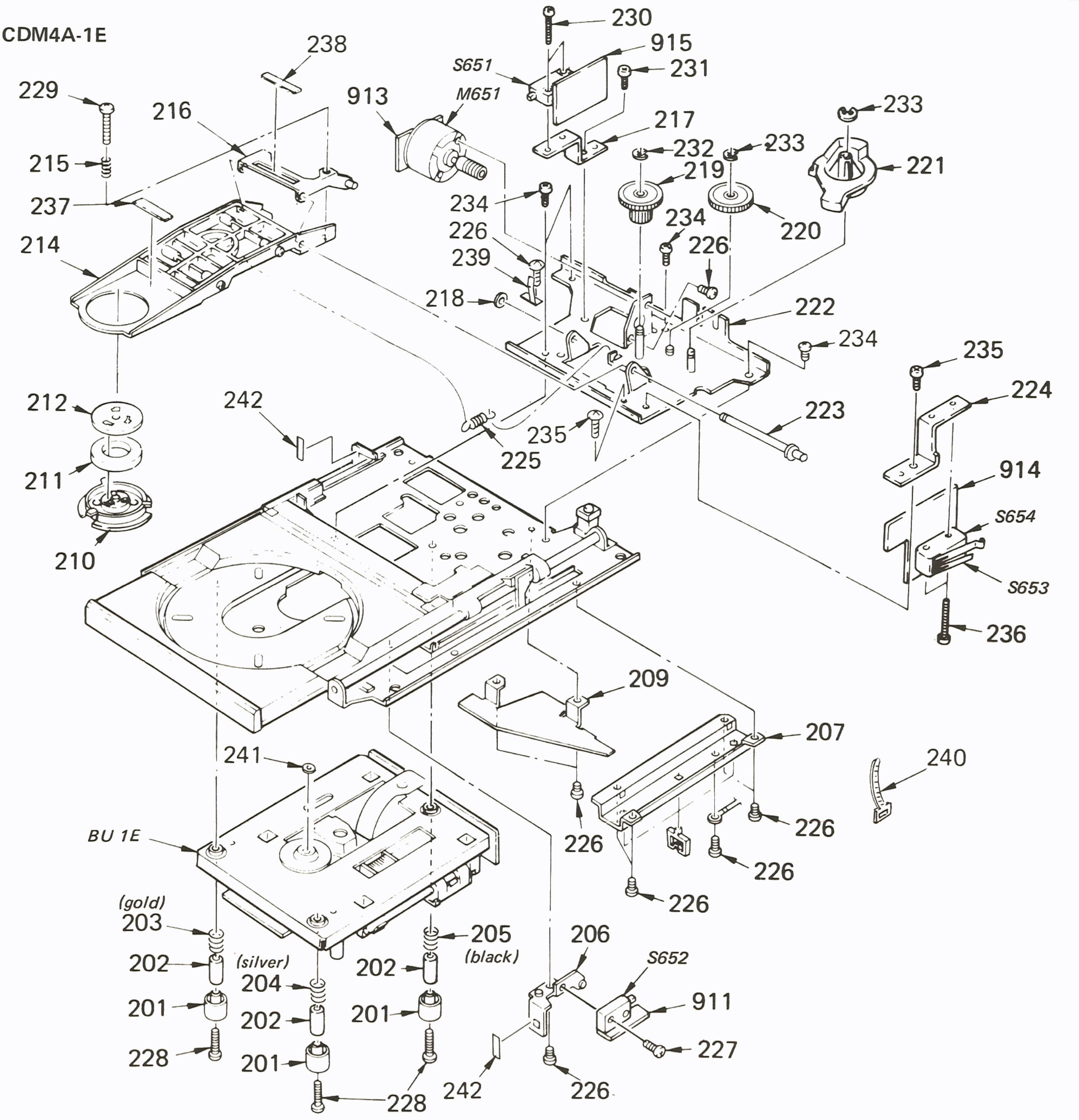
The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Les composants identifiés par une trame et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

No.	Part No.	Description	Remarks
51	7-685-134-19	SCREW +BTP 2.6X8 TYPE 2 N-S	
52	4-901-708-11	KNOB, LOV	
53	X-4908-931-1	(605ESD)....PANEL ASSY, FRONT	
	X-4910-451-1	(333ESD)....PANEL ASSY, FRONT	
54	7-685-871-01	SCREW +BVTT 3X6 (S)	
55	3-575-515-41	KNOB, SLIDE SWITCH	
56	*4-913-127-01	BRACKET, HEADPHONE	
57	4-911-049-01	SCREW (3X8)	
58	4-913-142-01	BUTTON, REPEAT	
59	*4-913-132-01	RETAINER, BUTTON	
60	7-685-534-11	SCREW +BTP 2.6X8 TYPE2 N-S	
61	*4-913-136-01	BRACKET (A), PANEL	
62	*4-913-140-01	PLATE, GROUND	
63	3-831-441-XX	CUSHION	
64	*4-913-146-01	RETAINER (B), BASE	
65	*4-913-147-01	RETAINER (A), BASE	
66	*4-913-141-01	HOLDER, LED	
67	*4-913-186-01	CUSHION, RUBBER	
68	*4-913-139-01	SPACER (A), LED	
69	*4-913-126-01	FILTER	
70	*4-913-156-01	RETAINER, BUTTON	
71	4-912-950-01	BUTTON, 10 GANG	
72	4-912-950-11	BUTTON, 10 GANG	
73	4-912-949-01	BUTTON, 4 GANG	
74	4-913-135-01	BUTTON, MODE	
75	X-4908-930-1	BASE ASSY (B), PANEL	
76	4-913-131-01	PLATE, TRANSPARENT	
77	4-913-150-01	PANEL, CONTROL BUTTON	
78	4-912-951-01	CUSHION, KNOB	
79	4-913-149-21	KNOB (OPEN/CLOSE), T	
80	X-4908-923-1	BUTTON ASSY, PLAY	
81	X-4908-922-1	BUTTON ASSY, PAUSE	
82	4-913-149-11	KNOB (STOP), T	
83	*4-913-128-01	PLATE, SHIELD	
84	3-655-653-21	BAND (TAITON), BINDING	
85	3-888-002-00	CUSHION, LED	
86	*3-324-837-01	CUSHION	
902	*1-620-818-11	PC BOARD, DISPLAY	
904	*1-620-822-21	PC BOARD, TIMER SWITCH	
905	*1-620-823-21	PC BOARD, HEADPHONE	
907	*1-620-819-11	PC BOARD, REMOCON RAY CATCHER	
D700	8-719-939-87	DIODE VR3638S-1	
D701	8-719-939-85	DIODE AY3638S-1	
D702	8-719-941-69	DIODE PG3668S	
D703	8-719-907-75	DIODE AA5534S	
D704	8-719-921-05	DIODE EBG5534S	

No.	Part No.	Description	Remarks
101	*4-913-161-01	PANEL, SUB	
103	*4-913-157-01	ANGLE, MD	
104	*4-912-954-01	ANGLE (B), MD	
105	4-917-460-01	KNOB, POWER	
106	*4-913-159-01	CHASSIS (LEFT)	
107	4-913-187-01	BOSS, PC BOARD STOPPER	
108	*4-913-926-01	BRACKET (LEFT), PC BOARD	
110	3-703-244-00	BUSHING (2104), CORD	
111	*4-913-122-11	(605ESD:US).........PLATE, JACK	
	*4-913-122-21	(605ESD:Canadian)...PLATE, JACK	
	*4-913-122-31	(333ESD)............PLATE, JACK	
112	*4-913-158-01	CHASSIS (RIGHT)	
113	*4-913-160-01	CHASSIS (C)	
114	*4-913-138-01	BRACKET, MD	
115	*4-913-151-01	BRACKET, TRANSFORMER	
116	*4-913-153-01	BRACKET, MAIN PC BOARD	
118	*4-908-502-01	HEAT SINK	
119	3-703-685-31	SCREW (+BV 3X8)	
120	7-685-871-01	SCREW +BVTT 3X6 (S)	
121	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
122	7-621-284-00	SCREW +B 2.6X4	
123	4-911-049-01	SCREW (3X8)	
124	*4-917-459-01	LEVER, POWER SWITCH	
125	*4-886-555-00	HEAT SINK	
127	2-259-121-00	SCREW, TR	
128	*3-309-144-01	HEAT SINK	
129	7-685-880-01	SCREW +BVTT 4X6 (S)	
130	*4-913-152-01	ESCUTCHEON, D/O	
131	4-870-539-00	PLATE, GROUND	
132	7-623-421-07	LW 2.6, TYPE B	
901	*A-4651-126-A	(605ESD)...MOUNTED PCB, MAIN	
	*A-4651-127-A	(333ESD)...MOUNTED PCB, MAIN	
903	*1-620-820-11	PC BOARD, POWER SWITCH	
906	*1-620-824-21	PC BOARD, DIGITAL OUT	
908	1-555-795-00	(333ESD)...CORD, POWER	
	1-557-577-11	(605ESD)...CORD, POWER	
IC801	8-759-171-15	IC UPC7815H	
IC802	8-759-179-15	IC UPC7915H	
IC805	8-759-700-51	IC NJM7805A	
IC806	8-759-700-28	IC NJM7905A	
IC850	8-759-700-51	IC NJM7805A	
T901 ⚠	.1-448-731-11	(333ESD)...TRANSFORMER, POWER	
T901 ⚠	.1-448-733-11	(605ESD)...TRANSFORMER, POWER	

(4) CDM4A-1E


230
915
S651
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913
M651
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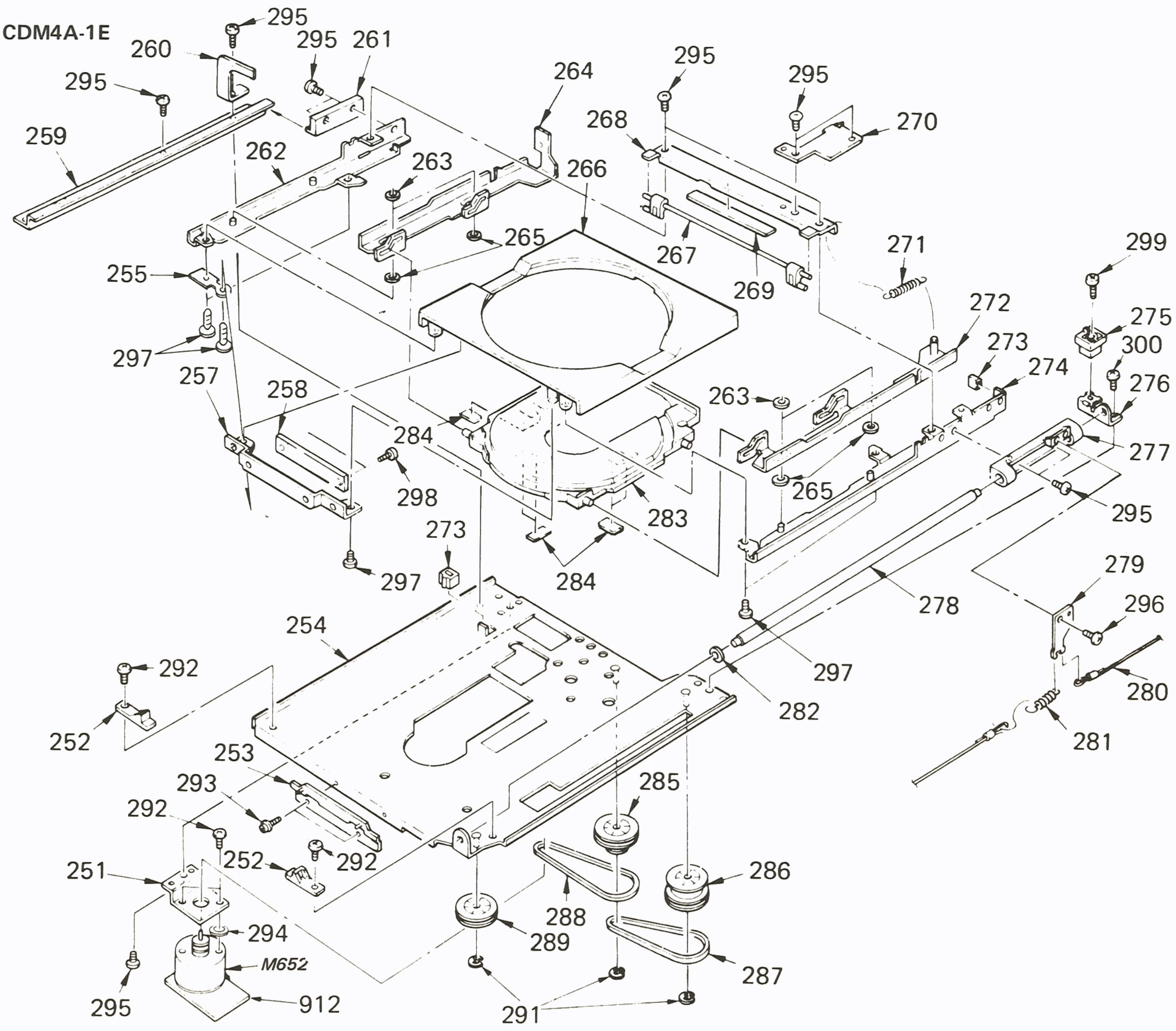
226
234
239
226
218
222
234
235
224
212
242
235
223
225
211
914
S654
210
S653
236
209
207
240
241
BU 1E
226
226
226
226
(gold)
203
205
206
202
(silver)
202
(black)
S652
204
911
201
202
201
227
228
201
228
242
226

No.	Part No.	Description	Remarks
201	4-908-592-01	POLE (A), INSULATOR	
202	4-908-636-01	SPACER	
203	4-912-548-01	SPRING, COMPRESSION	
204	4-912-547-01	SPRING, COMPRESSION	
205	4-912-549-01	SPRING, COMPRESSION	
206	*4-908-541-01	BRACKET (C), SWITCH	
207	*X-4908-517-1	COVER ASSY, ROPE	
209	*4-908-597-01	COVER, BELT	
210	4-912-530-01	PULLEY, PRESS	
211	1-452-340-11	MAGNET	
212	*4-912-515-01	YOKE	
214	*X-4912-509-1	ARM ASSY, C	
215	4-908-559-01	SPRING, COMPRESSION	
216	X-4908-513-1	PLATE ASSY, ADJUSTMENT, ARM	
217	*4-912-543-01	BRACKET (D), SWITCH	
218	3-558-708-21	WASHER, STOPPER	
219	4-912-514-01	GEAR (A)	
220	4-912-525-01	GEAR (B)	
221	4-912-528-01	GEAR, CAM	
222	*X-4912-503-1	CHASSIS ASSY, SUB	
223	4-908-513-01	SHAFT, FULCRUM, C ARM	
224	*4-912-524-01	BRACKET (A), SWITCH	
225	4-908-555-01	SPRING, TENSION (C ARM)	
226	7-621-775-00	SCREW +B 2.6X3	
227	7-621-259-55	SCREW +P 2.6X8	
228	7-682-153-09	SCREW +B 3X20	
229	7-621-775-80	SCREW +B 2.6X16	
230	7-685-864-01	SCREW +BVTT 2.6X10 (S)	
231	7-682-646-09	SCREW +PS 3X5	
232	7-624-109-04	STOP RING 5.0, TYPE -E	
233	7-624-106-04	STOP RING 3.0, TYPE -E	
234	7-682-546-04	SCREW +BVTT 3X5 (S)	
235	7-682-544-09	SCREW +B 3X3	
236	7-621-257-85	SCREW +P 2.3X14	
237	*4-912-551-01	SHEET (C), DT PS	
238	*4-912-552-01	SHEET (B), DT PS	
239	*4-912-569-01	PLATE (B), GROUND	
240	3-701-748-00	CLAMP	
241	*4-912-553-01	SPACER (D)	
242	*4-913-199-01	CUSHION (D), CHASSIS	
911	*1-617-229-11	PC BOARD, LOAD OUT SW	
913	*1-617-231-11	PC BOARD, CHACKING MOTOR	
914	*1-617-232-11	PC BOARD, L.C. SWITCH	
915	*1-617-233-11	PC BOARD, IN SWITCH	
M651	X-4902-019-1	CHUCKING MOTOR ASSY	

(5) CDM4A-1E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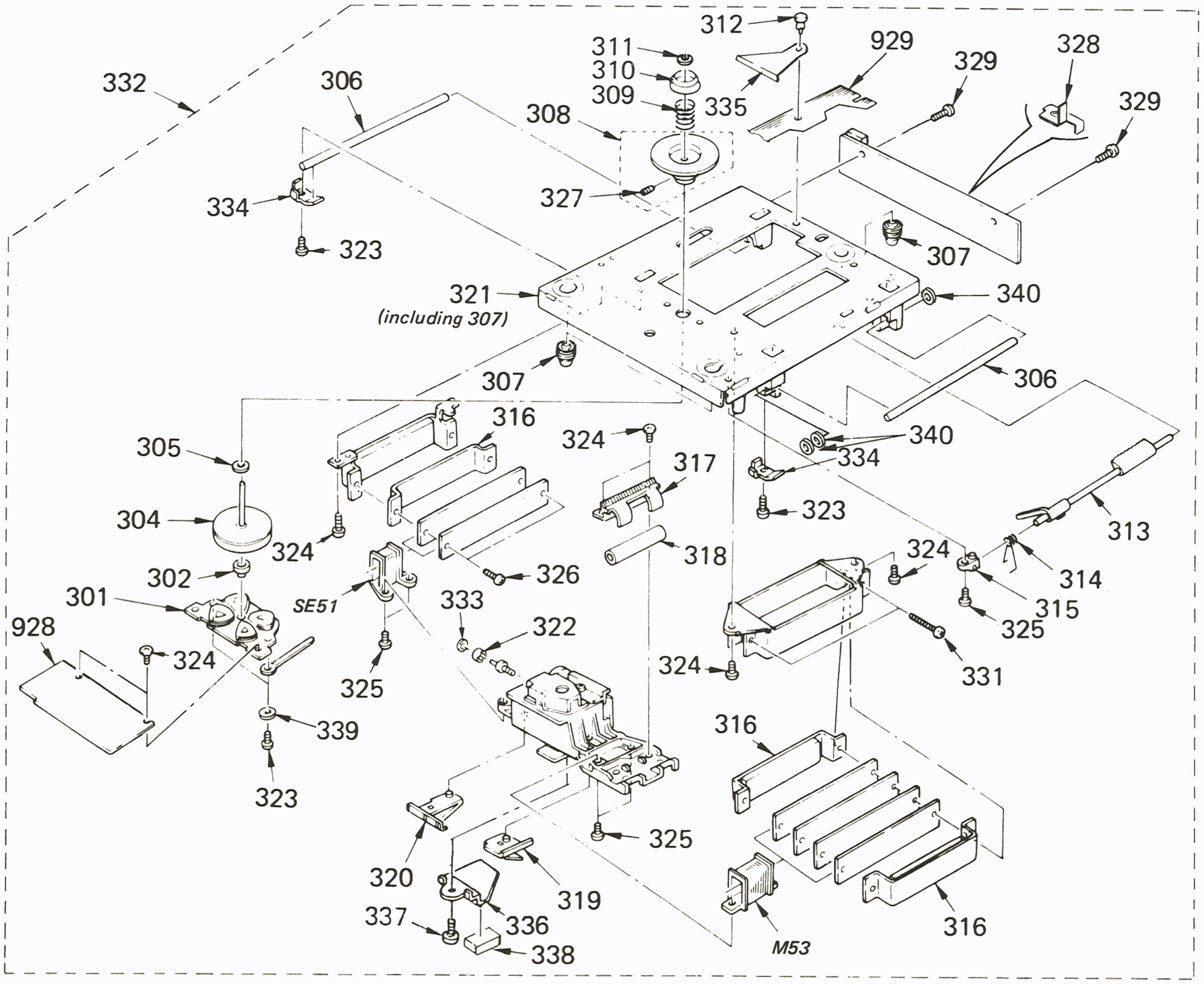
No.	Part No.	Description	Remarks
251	*4-908-523-01	BRACKET, MOTOR	
252	4-908-540-01	GUIDE, ASSIST	
253	*X-4912-508-1	BRACKET ASSY, TABLE	
254	*X-4912-507-1	CHASSIS ASSY, MECHANICAL	
255	*4-912-568-01	PLATE (A), GROUND	
257	*4-912-566-01	BRACKET, L PANEL	
258	*4-912-544-01	PLATE, FIXED	
259	*4-912-529-01	GUIDE, LOADING	
260	*4-912-527-01	RETAINER, TABLE	
261	*4-912-534-01	GUIDE, SUB	
262	*X-4912-504-1	BRACKET (LEFT) ASSY, TABLE	
263	3-558-708-21	WASHER, STOPPER	
264	*4-912-531-01	PLATE (LEFT), CAM, DISK	
265	3-701-439-11	WASHER	
266	4-908-584-03	TABLE, DISK	
267	4-908-534-01	LEVER, FUNCTION	
268	*4-912-532-01	REINFORCEMENT, TABLE	
269	*4-912-526-01	SHEET	
270	*4-912-522-01	PLATE, SW	
271	4-912-516-01	SPRING (DISK CAM), TENSION	
272	*X-4912-506-1	PLATE (RIGHT) ASSY, CAM, DISK	
273	4-887-175-00	RUBBER, STOPPER	
274	*X-4912-505-1	BRACKET (RIGHT) ASSY, TABLE	
275	*4-912-513-01	STOPPER, TABLE	
276	*4-912-519-01	RETAINER (RIGHT), SHAFT	
277	4-912-538-01	BEARING (RIGHT), GUIDE	
278	4-912-521-01	SHAFT (RIGHT), GUIDE	
279	*4-912-520-01	BRACKET, ROPE	
280	4-912-517-01	ROPE	
281	4-908-553-01	SPRING, COMPRESSION (ROPE)	
282	4-912-512-01	CUSHION (A)	
283	X-4912-511-1	PLATE ASSY, DISK	
284	*4-908-964-01	SHEET, PS, DT	
285	4-908-519-01	PULLEY (A)	
286	4-908-525-01	PULLEY (C)	
287	3-671-077-00	BELT, FF	
288	4-908-591-01	BELT, DRIVING	
289	4-908-524-01	PULLEY (B)	
291	7-624-106-04	STOP RING 3.0, TYPE -E	
292	7-621-775-00	SCREW +B 2.6X3	
293	7-621-759-60	+PSW, 2.6X8	
294	3-554-222-00	WASHER (2), CAPSTAN	
295	7-682-546-04	SCREW +BVTT 3X5 (S)	
296	7-685-132-19	SCREW +BTP 2.6X5 TYPE2 N-S	
297	7-685-646-79	SCREW +BVTP 3X8 TYPE2 SLIT	
298	7-685-791-04	SCREW +BVTT 2.6X5 (S)	
299	7-685-876-01	SCREW +BVTT 3X16 (S)	
300	7-682-646-09	SCREW +PS 3X5	
912	*1-617-230-11	PC BOARD, LOADING MOTOR	
M652	A-4608-303-A	MOTOR ASSY, LOADING	

(6) BU-1E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No.	Part No.	Description	Remarks
301	A-4675-068-A	BRACKET ASSY, MOTOR	
302	2-622-105-01	RETAINER, THRUST	
304	A-4675-069-A	ROTOR ASSY	
305	3-701-439-21	WASHER	
306	4-908-201-03	SHAFT, SLIDE	
307	4-908-593-01	INSULATOR	
308	X-4908-202-1	PULLEY ASSY, DISK	
309	4-908-213-01	SPRING, COMPRESSION	
310	4-915-217-01	CAP, CENTERING	
311	3-558-708-21	WASHER, STOPPER	
312	3-531-576-01	RIVET	
313	4-908-227-01	LEVER, LOCK	
314	4-908-230-01	SPRING	
315	4-908-220-01	HOLDER, ROD	
316	*A-4675-110-A	MAGNET ASSY, LINEAR	
317	4-908-224-01	HOLDER, BEARING	
318	4-908-221-01	BEARING	
319	4-908-225-01	RETAINER (A), LEAD	
320	4-908-219-01	RETAINER (B), LEAD	
321	*A-4675-112-A	BASE ASSY	
322	4-908-208-01	BEARING (NO-FLANGE), BALL	
323	7-685-134-19	SCREW +P 2.6X8 TYPE2 SLIT	
324	7-621-284-00	SCREW +B 2.6X4	
325	7-621-775-20	SCREW +B 2.6X5	
326	7-685-793-04	SCREW +BVTT 2.6X8 (S)	
327	7-621-734-09	SET-SCT, HEX. 2.6X3	
328	*4-908-232-01	LUG, GROUND	
329	7-685-864-01	SCREW +BVTT 2.6X10 (S)	
331	7-685-867-01	SCREW +BVTT 2.6X16 (S)	
332	X-4915-033-1	BU-1E	
333	7-624-105-04	STOP RING 2.3, TYPE -E	
334	4-908-245-01	RETAINER (C), SHAFT, SLIDE	
335	*4-908-254-01	RETAINER BOARD	
336	*4-908-255-01	SUPPORT, PC BOARD	
337	7-682-546-09	SCREW +B 3X6	
338	*4-919-205-01	CUSHION	
339	7-688-002-01	W 2.6, SMALL	
340	*4-908-269-01	CUSHION, SLIDE	
918	*1-620-663-11	PC BOARD, BSL MOTOR	
919	A-4646-215-A	MOUNTED PCB, FLEXIBLE	
M53	1-422-197-14	COIL (DRIVE)	
SE51	1-422-198-11	COIL (SENSOR)	

SECTION 6
ELECTRICAL PARTS LIST

NOTE:
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuitsin a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:
MF:μF, PF:μμF.

RESISTORS
- All resistors are in ohms.
- F : nonflammable

COILS
- MMH : mH, UH : μH

SEMICONDUCTORS
In each case, U : μ, for example:
UA...: μA..., UPA...: μPA..., UPC...: μPC,
UPD...: μPD...

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une trame et une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
901	*A-4651-126-A	(605ESD)...MOUNTED PCB, MAIN			
	*A-4651-127-A	(333ESD)...MOUNTED PCB, MAIN			
902	*1-620-818-11	PC BOARD, DISPLAY			
903	*1-620-820-11	PC BOARD, POWER SWITCH			
904	*1-620-822-21	PC BOARD, TIMER SWITCH			
905	*1-620-823-21	PC BOARD, HEADPHONE			
906	*1-620-824-21	PC BOARD, DIGITAL OUT			
907	*1-620-819-11	PC BOARD, REMOCON RAY CATCHER			
908	⚠ 1-555-795-00	(333ESD)...CORD, POWER			
	⚠ 1-557-577-11	(605ESD)...CORD, POWER			
911	*1-617-229-11	PC BOARD, LOAD OUT SW			
912	*1-617-230-11	PC BOARD, LOADING MOTOR			
913	*1-617-231-11	PC BOARD, CHACKING MOTOR			
914	*1-617-232-11	PC BOARD, L.C. SWITCH			
915	*1-617-233-11	PC BOARD, IN SWITCH			
928	*1-620-663-11	PC BOARD, BSL MOTOR			
929	A-4646-215-A	MOUNTED PCB, FLEXIBLE			
C51	1-135-008-00	TANTAL. CHIP	2.2MF	20%	6.3V
C151	1-162-596-00	CERAMIC	0.022MF		25V
C152	1-162-596-00	CERAMIC	0.022MF		25V
C153	1-161-494-00	CERAMIC	0.022MF	30%	25V
C154	1-123-332-00	ELECT	47MF	20%	16V
C155	1-123-332-00	ELECT	47MF	20%	16V
C201	1-136-159-00	FILM	0.033MF	5%	50V
C202	1-126-043-11	ELECT	0.47MF	20%	50V
C203	1-162-294-31	CERAMIC	0.001MF	10%	50V
C204	1-124-991-11	ELECT	22MF	20%	10V
C205	1-130-479-00	MYLAR	0.0047MF	5%	50V
C206	1-126-005-11	ELECT	10MF	20%	16V
C207	1-126-044-11	ELECT	1MF	20%	50V
C208	1-136-163-00	FILM	0.068MF	5%	50V
C209	1-130-479-00	MYLAR	0.0047MF	5%	50V
C210	1-162-199-31	CERAMIC	10PF	5%	50V
C211	1-136-165-00	FILM	0.1MF	5%	50V
C212	1-131-369-00	TANTALUM	4.7MF	10%	16V
C214	1-136-159-00	FILM	0.033MF	5%	50V
C215	1-136-165-00	FILM	0.1MF	5%	50V
C216	1-162-306-31	CERAMIC	0.01MF	20%	16V
C217	1-162-596-00	CERAMIC	0.022MF		25V
C218	1-162-306-31	CERAMIC	0.01MF	20%	16V
C219	1-162-596-00	CERAMIC	0.022MF		25V
C220	1-162-596-00	CERAMIC	0.022MF		25V
C221	1-136-164-00	FILM	0.082MF	5%	50V
C222	1-136-159-00	FILM	0.033MF	5%	50V
C223	1-162-596-00	CERAMIC	0.022MF		25V
C224	1-130-479-00	MYLAR	0.0047MF	5%	50V
C225	1-126-023-11	ELECT	100MF	20%	25V
C226	1-126-023-11	ELECT	100MF	20%	25V
C227	1-130-475-00	MYLAR	0.0022MF	5%	50V
C251	1-124-994-11	ELECT	100MF	20%	10V
C252	1-124-994-11	ELECT	100MF	20%	10V
C255	1-124-994-11	ELECT	100MF	20%	10V
C257	1-124-994-11	ELECT	100MF	20%	10V
C258	1-124-994-11	ELECT	100MF	20%	10V
C259	1-126-023-11	ELECT	100MF	20%	25V
C260	1-126-023-11	ELECT	100MF	20%	25V
C265	1-124-994-11	ELECT	100MF	20%	10V
C266	1-124-994-11	ELECT	100MF	20%	10V
C301	1-136-153-00	FILM	0.01MF	5%	50V
C302	1-126-043-11	ELECT	0.47MF	20%	50V
C315	1-162-596-00	CERAMIC	0.022MF		25V
C321	1-124-994-11	ELECT	100MF	20%	10V
C324	1-124-994-11	ELECT	100MF	20%	10V
C325	1-124-994-11	ELECT	100MF	20%	10V
C327	1-124-994-11	ELECT	100MF	20%	10V
C329	1-124-994-11	ELECT	100MF	20%	10V
C330	1-124-994-11	ELECT	100MF	20%	10V
C361	1-126-044-11	ELECT	1MF	20%	50V
C400	1-162-199-31	CERAMIC	10PF	5%	50V
C401	1-162-203-31	CERAMIC	15PF	5%	50V
C402	1-162-203-31	CERAMIC	15PF	5%	50V
C403	1-123-333-00	ELECT	100MF	20%	25V
C407	1-162-596-00	CERAMIC	0.022MF		25V
C410	1-162-290-31	CERAMIC	470PF	10%	50V
C411	1-162-179-11	CERAMIC	0.1MF		50V
C412	1-162-179-11	CERAMIC	0.1MF		50V
C413	1-162-179-11	CERAMIC	0.1MF		50V
C414	1-162-179-11	CERAMIC	0.1MF		50V
C415	1-162-179-11	CERAMIC	0.1MF		50V
C416	1-162-179-11	CERAMIC	0.1MF		50V
C417	1-162-179-11	CERAMIC	0.1MF		50V
C418	1-136-254-11	FILM	0.002MF	3%	100V
C419	1-130-892-00	FILM	0.015MF	3%	100V
C420	1-136-233-11	FILM	0.0047MF	3%	100V
C421	1-136-254-11	FILM	0.002MF	3%	100V
C422	1-136-227-11	FILM	0.0011MF	3%	100V
C423	1-124-929-11	ELECT	22MF	20%	63V
C424	1-130-848-00	FILM	0.0082MF	10%	100V
C460	1-162-290-31	CERAMIC	470PF	10%	50V
C480	1-123-333-00	ELECT	100MF	20%	25V
C481	1-130-848-00	FILM	0.0082MF	10%	100V

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
C482	1-123-359-00	ELECT	47MF	20%	50V
C483	1-130-848-00	FILM	0.0082MF	10%	100V
C484	1-162-218-31	CERAMIC	62PF	5%	50V
C485	1-162-179-11	CERAMIC	0.1MF		50V
C489	1-162-294-31	CERAMIC	0.001MF	10%	50V
C490	1-162-294-31	CERAMIC	0.001MF	10%	50V
C493	1-162-294-31	CERAMIC	0.001MF	10%	50V
C494	1-162-294-31	CERAMIC	0.001MF	10%	50V
C495	1-162-294-31	CERAMIC	0.001MF	10%	50V
C498	1-162-294-31	CERAMIC	0.001MF	10%	50V
C499	1-162-294-31	CERAMIC	0.001MF	10%	50V
C502	1-162-199-31	CERAMIC	10PF	5%	50V
C503	1-162-306-31	CERAMIC	0.01MF	20%	16V
C504	1-162-294-31	CERAMIC	0.001MF	10%	50V
C505	1-162-294-31	CERAMIC	0.001MF	10%	50V
C506	1-162-306-31	CERAMIC	0.01MF	20%	16V
C507	1-162-294-31	CERAMIC	0.001MF	10%	50V
C508	1-162-179-11	CERAMIC	0.1MF		50V
C511	1-162-179-11	CERAMIC	0.1MF		50V
C512	1-162-179-11	CERAMIC	0.1MF		50V
C513	1-162-179-11	CERAMIC	0.1MF		50V
C514	1-162-179-11	CERAMIC	0.1MF		50V
C515	1-162-179-11	CERAMIC	0.1MF		50V
C516	1-162-179-11	CERAMIC	0.1MF		50V
C517	1-162-179-11	CERAMIC	0.1MF		50V
C518	1-136-254-11	FILM	0.002MF	3%	100V
C519	1-130-892-00	FILM	0.015MF	3%	100V
C520	1-136-233-11	FILM	0.0047MF	3%	100V
C521	1-136-254-11	FILM	0.002MF	3%	100V
C522	1-136-227-11	FILM	0.0011MF	3%	100V
C523	1-124-929-11	ELECT	22MF	20%	63V
C524	1-130-848-00	FILM	0.0082MF	10%	100V
C525	1-124-929-11	ELECT	22MF	20%	63V
C526	1-124-929-11	ELECT	22MF	20%	63V
C550	1-123-333-00	ELECT	100MF	20%	25V
C551	1-123-333-00	ELECT	100MF	20%	25V
C552	1-162-596-00	CERAMIC	0.0022MF	10%	50V
C560	1-162-290-31	CERAMIC	470PF	10%	50V
C651	1-136-157-00	FILM	0.022MF	5%	50V
C652	1-136-157-00	FILM	0.022MF	5%	50V
C653	1-136-157-00	FILM	0.022MF	5%	50V
C654	1-130-479-00	MYLAR	0.0047MF	5%	50V
C655	1-130-479-00	MYLAR	0.0047MF	5%	50V
C701	1-162-179-11	CERAMIC	0.1MF		50V
C702	1-162-179-11	CERAMIC	0.1MF		50V
C703	1-162-179-11	CERAMIC	0.1MF		50V
C710	1-124-225-00	ELECT	100MF	20%	6.3V
C801	1-136-165-00	FILM	0.1MF	5%	50V
C802	1-130-789-00	FILM	1MF	10%	100V
C803	1-126-129-11	ELECT	6800MF	20%	35V
C804	1-126-129-11	ELECT	6800MF	20%	35V
C805	1-123-378-00	ELECT	1000MF	20%	63V
C806	1-123-378-00	ELECT	1000MF	20%	63V
C809	1-126-021-11	ELECT	33MF	20%	25V
C810	1-126-021-11	ELECT	33MF	20%	25V

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
C813	1-123-333-00	ELECT	100MF	20%	25V
C814	1-123-333-00	ELECT	100MF	20%	25V
C851	1-126-017-11	ELECT	6800MF	20%	16V
C852	1-126-016-11	ELECT	4700MF	20%	16V
C853	1-126-014-11	ELECT	2200MF	20%	16V
C854	1-126-012-11	ELECT	470MF	20%	16V
C855	1-126-043-11	ELECT	0.47MF	20%	50V
C856	1-126-045-11	ELECT	2.2MF	20%	50V
C857	1-124-122-11	ELECT	100MF	20%	50V
C858	1-124-478-11	ELECT	100MF	20%	25V
C859	1-124-478-11	ELECT	100MF	20%	25V
C860	1-124-478-11	ELECT	100MF	20%	25V
C861	1-126-052-11	ELECT	100MF	20%	50V
C901	⚠1-161-744-00	CERAMIC	0.01MF		400V
CNJ151*	1-560-073-00	PIN, CONNECTOR			
CNJ400	1-563-558-11	JACK, PIN 2P (LINE OUT)			
CNJ480	1-507-567-71	JACK, PIN 1P (DIGITAL OUT)			
CNJ481*	1-564-706-41	PIN, CONNECTOR (SMALL TYPE) 4P			
CNJ552	1-507-863-21	JACK, LARGE TYPE (HEADPHONES)			
CNP200*	1-564-709-11	PIN, CONNECTOR (SMALL TYPE) 7P			
CNP201*	1-564-710-11	PIN, CONNECTOR (SMALL TYPE) 8P			
CNP203*	1-564-706-31	PIN, CONNECTOR (SMALL TYPE) 4P			
CNP300*	1-564-707-11	PIN, CONNECTOR (SMALL TYPE) 5P			
CNP301*	1-564-509-11	PLUG, CONNECTOR 6P			
CNP302*	1-506-503-11	PIN, CONNECTOR 9P			
CNP303*	1-564-337-00	PIN, CONNECTOR 3P			
CNP304*	1-564-705-11	PIN, CONNECTOR (SMALL TYPE) 3P			
CNP401*	1-564-506-11	PLUG, CONNECTOR 3P			
CNP402*	1-564-507-21	PLUG, CONNECTOR 4P			
CNP481*	1-564-706-41	PIN, CONNECTOR (SMALL TYPE) 4P			
CNP551*	1-564-510-21	PLUG, CONNECTOR 7P			
CNP601*	1-564-522-11	PLUG, CONNECTOR 7P			
CNP602*	1-564-505-11	PLUG, CONNECTOR 2P			
CNP603*	1-564-505-21	PLUG, CONNECTOR 2P			
CNP604*	1-564-505-11	PLUG, CONNECTOR 2P			
CNP606*	1-564-506-11	PLUG, CONNECTOR 3P			
CNP705*	1-564-496-11	PIN, CONNECTOR 3P			
CNP751*	1-564-705-11	PIN, CONNECTOR (SMALL TYPE) 3P			
CNP801*	1-564-341-11	PIN, CONNECTOR 7P			
CP151	1-233-079-11	COMPOSITION CIRCUIT BLOCK			
CP152	1-233-079-11	COMPOSITION CIRCUIT BLOCK			
CP700	1-232-967-11	COMPOSITION CIRCUIT BLOCK			
D51	8-719-911-19	DIODE 1SS119			
D200	8-719-940-76	DIODE 1SS132			
D320	8-719-940-76	DIODE 1SS132			
D321	8-719-940-76	DIODE 1SS132			
D361	8-719-109-81	DIODE RD4.7ES-B2			
D362	8-719-940-76	DIODE 1SS132			
D363	8-719-940-76	DIODE 1SS132			
D364	8-719-940-76	DIODE 1SS132			
D365	8-719-110-35	DIODE RD13ES-B1			
D367	8-719-110-03	DIODE RD7.5ES-B1			
D368	8-719-940-76	DIODE 1SS132			
D651	8-719-200-02	DIODE 10E2			
D652	8-719-200-02	DIODE 10E2			
D653	8-719-200-02	DIODE 10E2			
D654	8-719-200-02	DIODE 10E2			
D700	8-719-939-87	DIODE VR3638S-1			
D701	8-719-939-85	DIODE AY3638S-1			
D702	8-719-941-69	DIODE PG3668S			

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ELECTRICAL PARTS

Ref.No.	Part No.	Description
D703	8-719-907-75	DIODE AA5534S
D704	8-719-921-05	DIODE EBG5534S
D705	8-719-940-76	DIODE 1SS132
D801 ⚠	8-719-937-49	DIODE RDF02M
D850	8-719-940-76	DIODE 1SS132
D851	8-719-940-76	DIODE 1SS132
D852 ⚠	8-719-937-50	DIODE DF02M
D856	8-719-940-76	DIODE 1SS132
D857	8-719-200-23	DIODE 11E2
D858	8-719-200-23	DIODE 11E2
D859	8-719-200-23	DIODE 11E2
D860	8-719-200-23	DIODE 11E2
D861	8-719-110-80	DIODE RD33ES-B4
D862	8-719-110-05	DIODE RD8.2ES-B
H151	8-719-800-31	DIODE THS103A-1
H152	8-719-800-31	DIODE THS103A-1
IC151	8-759-202-01	IC TA7256P
IC201	8-752-031-65	IC CXA1082AQ
IC202	8-759-202-01	IC TA7256P
IC203	8-759-202-01	IC TA7256P
IC301	8-752-322-04	IC CXD1125Q
IC302	8-759-910-36	IC MSM5218-20GS
IC303	8-759-940-64	IC MSM6404A-181RS
IC304	8-759-804-47	IC LC6523H-3270
IC305	8-759-202-12	IC TC74HC02P
IC400	8-759-939-35	IC CXD1088Q
IC401	8-759-939-94	IC TDA1541-N5
IC410	8-759-900-72	IC NE5532P
IC480	8-759-202-13	IC TC74HCU04P
IC481	8-759-000-XX	IC MC74HC74N
IC510	8-759-900-72	IC NE5532P
IC550	8-759-700-40	IC NJM4560S
IC701	8-752-801-26	IC CXP5016H-178S
IC710	8-749-900-36	IC BX-1393
IC801	8-759-171-15	IC UPC7815H
IC802	8-759-179-15	IC UPC7915H
IC803	8-759-178-12	IC UPC78L12L
IC804	8-759-700-69	IC NJM79L12A
IC805	8-759-700-51	IC NJM7805A
IC806	8-759-700-28	IC NJM7905A
IC850	8-759-700-51	IC NJM7805A
IC851	8-759-700-28	IC NJM7905A
L51	1-408-563-00	MICRO INDUCTOR 10UH
L480	1-459-587-11	COIL (WITH CORE)
L901 ⚠	1-421-340-00	(333ESD)...LINE FILTER
L901 ⚠	1-421-580-00	(605ESD)...TRANSFORMER, LINE FILTER(LFT)
LP801	*1-535-116-00	TERMINAL
LP851	*1-535-118-00	TERMINAL
LP901	*1-535-476-11	TERMINAL
LP902	*1-535-476-11	TERMINAL
LP903	*1-535-139-00	(605ESD)...BASE POST 19MM(10MM PITCH) 2P
LP903	*1-535-140-00	(333ESD)...BASE POST 19MM(10MM PITCH) 3P
M53	1-422-197-14	COIL (DRIVE)
M651	X-4902-019-1	MOTOR ASSY, CHUCKING
M652	A-4608-303-A	MOTOR ASSY, LOADING
ND701	1-519-412-11	INDICATOR TUBE, FLUORESCENT

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
PS201 ⚠	1-532-605-00	(333ESD)...LINK, IC			
PS202 ⚠	1-532-605-00	(333ESD)...LINK, IC			
PS801 ⚠	1-532-675-00	(333ESD)...LINK, IC			
PS802 ⚠	1-532-675-00	(333ESD)...LINK, IC			
PS851 ⚠	1-532-686-00	(333ESD)...LINK, IC			
PS852 ⚠	1-532-686-00	(333ESD)...LINK, IC			
PS853 ⚠	1-532-675-00	(333ESD)...LINK, IC			
Q200	8-729-900-65	TRANSISTOR DTA144ES			
Q201	8-729-900-80	TRANSISTOR DTC114ES			
Q202	8-729-900-89	TRANSISTOR DTC144ES			
Q203	8-729-900-65	TRANSISTOR DTA144ES			
Q204	8-729-600-27	TRANSISTOR 2SC634SP			
Q361	8-729-900-61	TRANSISTOR DTA114ES			
Q362	8-729-900-61	TRANSISTOR DTA114ES			
Q363	8-729-900-80	TRANSISTOR DTC114ES			
Q460	8-729-107-99	TRANSISTOR 2SC3622A			
Q560	8-729-107-99	TRANSISTOR 2SC3622A			
Q651	8-729-177-43	TRANSISTOR 2SD774			
Q700	8-729-900-80	TRANSISTOR DTC114ES			
Q701	8-729-900-80	TRANSISTOR DTC114ES			
Q702	8-729-900-80	TRANSISTOR DTC114ES			
Q703	8-729-900-80	TRANSISTOR DTC114ES			
Q704	8-729-900-80	TRANSISTOR DTC114ES			
Q850	8-729-205-95	TRANSISTOR 2SA1428-Y			
R151	1-249-417-11	CARBON	1K	5%	1/6W
R152	1-249-417-11	CARBON	1K	5%	1/6W
R153	1-249-417-11	CARBON	1K	5%	1/6W
R154	1-247-887-00	CARBON	220K	5%	1/6W
R155	1-249-417-11	CARBON	1K	5%	1/6W
R156	1-249-417-11	CARBON	1K	5%	1/6W
R157	1-249-417-11	CARBON	1K	5%	1/6W
R158	1-247-887-00	CARBON	220K	5%	1/6W
R200	1-249-441-11	CARBON	100K	5%	1/6W
R201	1-247-903-00	CARBON	1M	5%	1/6W
R202	1-247-862-00	CARBON	20K	5%	1/6W
R203	1-249-441-11	CARBON	100K	5%	1/6W
R204	1-215-434-00	METAL	3.6K	1%	1/6W
R205	1-247-881-00	CARBON	120K	5%	1/6W
R206	1-249-429-11	CARBON	10K	5%	1/6W
R207	1-249-433-11	CARBON	22K	5%	1/6W
R208	1-249-429-11	CARBON	10K	5%	1/6W
R210	1-249-425-11	CARBON	4.7K	5%	1/6W
R211	1-247-885-00	CARBON	180K	5%	1/6W
R212	1-247-901-00	CARBON	820K	5%	1/6W
R213	1-247-881-00	CARBON	120K	5%	1/6W
R214	1-247-876-00	CARBON	75K	5%	1/6W
R215	1-247-881-00	CARBON	120K	5%	1/6W
R216	1-247-881-00	CARBON	120K	5%	1/6W
R217	1-247-885-00	CARBON	180K	5%	1/6W
R218	1-249-405-11	CARBON	100	5%	1/6W
R219	1-247-885-00	CARBON	180K	5%	1/6W
R220	1-249-405-11	CARBON	100	5%	1/6W
R221	1-249-405-11	CARBON	100	5%	1/6W
R222	1-247-864-00	CARBON	24K	5%	1/6W
R223	1-249-439-11	CARBON	68K	5%	1/6W
R224	1-249-432-11	CARBON	18K	5%	1/6W
R225	1-249-405-11	CARBON	100	5%	1/6W

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ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R226	1-247-896-00	CARBON	510K	5%	1/6W
R227	1-249-429-11	CARBON	10K	5%	1/6W
R228	1-249-417-11	CARBON	1K	5%	1/6W
R229	1-249-429-11	CARBON	10K	5%	1/6W
R230	1-249-441-11	CARBON	100K	5%	1/6W
R231	1-249-429-11	CARBON	10K	5%	1/6W
R232	1-249-417-11	CARBON	1K	5%	1/6W
R301	1-249-429-11	CARBON	10K	5%	1/6W
R302	1-249-441-11	CARBON	100K	5%	1/6W
R303	1-249-437-11	CARBON	47K	5%	1/6W
R304	1-247-891-00	CARBON	330K	5%	1/6W
R305	1-247-903-00	CARBON	1M	5%	1/6W
R306	1-249-417-11	CARBON	1K	5%	1/6W
R307	1-215-469-00	METAL	100K	1%	1/6W
R308	1-215-469-00	METAL	100K	1%	1/6W
R309	1-249-417-11	CARBON	1K	5%	1/6W
R310	1-249-413-11	CARBON	470	5%	1/6W
R311	1-249-413-11	CARBON	470	5%	1/6W
R312	1-249-425-11	CARBON	4.7K	5%	1/6W
R361	1-247-713-11	CARBON	1K	5%	1/4W
R362	1-249-441-11	CARBON	100K	5%	1/6W
R363	1-249-422-11	CARBON	2.7K	5%	1/6W
R401	1-247-819-00	CARBON	330	5%	1/6W
R402	1-249-433-11	CARBON	22K	5%	1/6W
R404	1-249-417-11	CARBON	1K	5%	1/6W
R405	1-247-819-00	CARBON	330	5%	1/6W
R411	1-249-679-11	CARBON	1.8K		1/2W
R412	1-247-713-11	CARBON	1K		1/4W
R413	1-247-725-11	CARBON	470K		1/4W
R414	1-249-681-11	CARBON	2.2K		1/2W
R415	1-249-681-11	CARBON	2.2K		1/2W
R416	1-246-533-00	CARBON	330K		1/4W
R417	1-247-739-11	CARBON	100		1/2W
R418	1-249-586-11	CARBON	27K		1/4W
R419	1-247-739-11	CARBON	100		1/2W
R460	1-249-417-11	CARBON	1K	5%	1/6W
R461	1-249-424-11	CARBON	3.9K	5%	1/6W
R462	1-249-432-11	CARBON	18K	5%	1/6W
R463	1-249-405-11	CARBON	100	5%	1/6W
R464	1-249-421-11	CARBON	2.2K	5%	1/6W
R480	1-247-804-00	CARBON	75	5%	1/6W
R481	1-247-808-00	CARBON	110	5%	1/6W
R501	1-247-819-00	CARBON	220	5%	1/6W
R503	1-249-409-11	CARBON	220	5%	1/6W
R504	1-249-411-11	CARBON	330	5%	1/6W
R511	1-249-679-11	CARBON	1.8K		1/?W
R512	1-247-713-11	CARBON	1K		1/4W
R513	1-247-725-11	CARBON	470K		1/4W
R514	1-249-681-11	CARBON	2.2K		1/2W
R515	1-249-681-11	CARBON	2.2K		1/2W
R516	1-246-533-00	CARBON	330K		1/4W
R517	1-247-739-11	CARBON	100		1/2W
R518	1-249-586-11	CARBON	27K		1/4W
R519	1-247-739-11	CARBON	100		1/2W
R560	1-249-417-11	CARBON	1K	5%	1/6W
R561	1-249-424-11	CARBON	3.9K	5%	1/6W
R562	1-249-432-11	CARBON	18K	5%	1/6W
R563	1-249-405-11	CARBON	100	5%	1/6W
R564	1-249-421-11	CARBON	2.2K	5%	1/6W
R651	1-249-417-11	CARBON	1K	5%	1/6W

ELECTRICAL PARTS

Ref.No.	Part No.	Description				
R652	1-249-417-11	CARBON	1K	5%	1/6W	
R703	1-249-433-11	CARBON	22K	5%	1/6W	
R704	1-249-433-11	CARBON	22K	5%	1/6W	
R705	1-247-818-00	CARBON	300	5%	1/6W	
R706	1-249-406-11	CARBON	120	5%	1/6W	
R707	1-249-405-11	CARBON	100	5%	1/6W	
R708	1-249-409-11	CARBON	220	5%	1/6W	
R709	1-249-407-11	CARBON	150	5%	1/6W	
R710	1-249-441-11	CARBON	100K	5%	1/6W	
R711	1-249-441-11	CARBON	100K	5%	1/6W	
R801⚠	.1-217-397-00	FUSIBLE	68	5%	1/4W	F
R802⚠	.1-217-399-00	FUSIBLE	100	5%	1/4W	F
R803⚠	.1-217-399-00	FUSIBLE	100	5%	1/4W	F
R804⚠	.1-217-397-00	FUSIBLE	68	5%	1/4W	F
R805⚠	.1-217-397-00	FUSIBLE	68	5%	1/4W	F
R850	1-247-696-11	CARBON	47	5%	1/4W	
R851	1-247-852-00	CARBON	7.5K	5%	1/6W	
R852	1-249-441-11	CARBON	100K	5%	1/6W	
R853⚠	.1-217-387-00	FUSIBLE	10	5%	1/4W	F
R854	1-247-716-11	CARBON	1.8K	5%	1/4W	
R855	1-249-433-11	CARBON	22K	5%	1/6W	
R857	1-249-429-11	CARBON	10K	5%	1/6W	
RV201	1-228-990-00	RES, ADJ, METAL GLAZE 1K				
RV202	1-237-194-11	RES, ADJ, CARBON 20K				
RV203	1-237-194-11	RES, ADJ, CARBON 20K				
RV560	1-230-997-21	RES, VAR, CARBON 20K/20K (HEADPHONES LEVEL)				
RY401	1-515-645-11	RELAY				
RY402	1-515-645-11	RELAY				
S651	1-554-205-00	SWITCH, PUSH (LOAD IN DET)				
S652	1-554-205-00	SWITCH, PUSH (LOAD OUT DET)				
S653	1-553-636-00	SWITCH, MICRO (MOTOR SELECT)				
S654	1-570-447-11	SWITCH, MICRO (CHUCKING)				
S700	1-554-303-21	SWITCH, KEY BOARD (1)				
S701	1-554-303-21	SWITCH, KEY BOARD (2)				
S702	1-554-303-21	SWITCH, KEY BOARD (3)				
S703	1-554-303-21	SWITCH, KEY BOARD (4)				
S704	1-554-303-21	SWITCH, KEY BOARD (5)				
S705	1-554-303-21	SWITCH, KEY BOARD ( )				
S706	1-554-303-21	SWITCH, KEY BOARD (OPEN/CLOSE)				
S708	1-554-303-21	SWITCH, KEY BOARD (6)				
S709	1-554-303-21	SWITCH, KEY BOARD (7)				
S710	1-554-303-21	SWITCH, KEY BOARD (8)				
S711	1-554-303-21	SWITCH, KEY BOARD (9)				
S712	1-554-303-21	SWITCH, KEY BOARD (10)				
S713	1-554-303-21	SWITCH, KEY BOARD (				
S714	1-554-303-21	SWITCH, KEY BOARD (A<->B)				
S716	1-554-303-21	SWITCH, KEY BOARD (11)				
S717	1-554-303-21	SWITCH, KEY BOARD (12)				
S718	1-554-303-21	SWITCH, KEY BOARD (13)				
S719	1-554-303-21	SWITCH, KEY BOARD (14)				
S720	1-554-303-21	SWITCH, KEY BOARD (15)				
S721	1-554-303-21	SWITCH, KEY BOARD (				
S722	1-554-303-21	SWITCH, KEY BOARD (DISPLAY TYME/ENXT (PGM))				

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ELECTRICAL PARTS

Ref.No.	Part No.	Description
S724	1-554-303-21	SWITCH, KEY BOARD (16)
S725	1-554-303-21	SWITCH, KEY BOARD (17)
S726	1-554-303-21	SWITCH, KEY BOARD (18)
S727	1-554-303-21	SWITCH, KEY BOARD (19)
S728	1-554-303-21	SWITCH, KEY BOARD (20)
S729	1-554-303-21	SWITCH, KEY BOARD (PROGRAM)
S730	1-554-303-21	SWITCH, KEY BOARD (SHUFFLE)
S732	1-554-303-21	SWITCH, KEY BOARD (+10)
S733	1-554-303-21	SWITCH, KEY BOARD (0)
S734	1-554-303-21	SWITCH, KEY BOARD (CHECK)
S735	1-554-303-21	SWITCH, KEY BOARD (CLEAR)
S736	1-554-303-21	SWITCH, KEY BOARD (CONTINUE)
S737	1-554-303-21	SWITCH, KEY BOARD (SINGLE)
S738	1-554-303-21	SWITCH, KEY BOARD (REPEAT)
S739	1-554-303-21	SWITCH, KEY BOARD (COUNT)
S740	1-554-303-21	SWITCH, KEY BOARD (
S741	1-554-303-21	SWITCH, KEY BOARD (
S742	1-554-303-21	SWITCH, KEY BOARD (
S743	1-554-303-21	SWITCH, KEY BOARD (
S744	1-554-303-21	SWITCH, KEY BOARD (
S745	1-554-303-21	SWITCH, KEY BOARD (
S746	1-554-303-21	SWITCH, KEY BOARD (AUTO PAUSE)
S747	1-554-303-21	SWITCH, KEY BOARD (AUTO SPACE)
SE51	1-422-198-11	COIL (SENSOR)
SW480	1-516-778-XX	SWITCH, SLIDE (DIGITAL OUT)
SW751	1-552-809-00	SWITCH, SLIDE (TIMER)
SW901⚠	1-553-318-00	SWITCH, PUSH (POWER)
T901⚠.	1-448-731-11	(333ESD)...TRANSFORMER, POWER
T901⚠.	1-448-733-11	(605ESD)...TRANSFORMER, POWER
X401	1-567-741-11	VIBRATOR, CRYSTAL 16.9344MHz
X700	1-567-686-11	OSCILLATOR, CERAMIC 4MHz

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ACCESSORY & PACKING MATERIAL

Part No.	Description
1-463-683-11	REMOTE COMMANDER (RM-D550)
1-558-787-31	CORD, CONNECTION
3-701-630-00	BAG, POLYETHYLENE
3-703-390-01	(605ESD:US)...INSTRUCTION
*3-795-629-11	(333ESD)......INSTRUCTION
3-765-687-11	(333ESD)....MANUAL, INSTRUCTION
3-765-687-21	(605ESD)....MANUAL, INSTRUCTION
3-765-687-31	(605ESD:Canadian)...MANUAL, INSTRUCTION
3-765-687-41	(333ESD)...........MANUAL, INSTRUCTION
4-912-955-11	(605ESD:US).........INDIVIDUAL CARTON
4-912-955-21	(605ESD:Canadian)...INDIVIDUAL CARTON
4-912-955-31	(333ESD)...........INDIVIDUAL CARTON
4-913-177-01	CHUSHION
4-913-941-01	HOLDER, COMMANDER
4-917-494-01	LID, BATTERY (for REMOTE COMMANDER)

9-952-594-11

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Audio Group

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